

Think GAIA
For Life and the Earth

SANYO

VRF DC-Inverter Air Conditioners

ECO i VRF DC Inverter Air Conditioners



ELECTRIC VRF

GAS DRIVEN VRF

COMMERCIAL SPLIT SYSTEMS

ROOM AIR CONDITIONERS

MINI *ECO i*



2 WAY *ECO i*
5N series



3 WAY *ECO i*



Think GAIA

For Life and the Earth

"GAIA" is a term that encompasses the Blue Planet, "Earth," and the infinite varieties of "life" that live and breathe on it.

It describes the world as a single living organism, where all life and nature co-exist interdependently.

SANYO is committed to listening to GAIA's voice and engaging in activities that are beneficial to life and the Earth.

As a testament to this, SANYO pledges to respond by developing only products that are absolutely essential to life and the Earth.

We aim to bequeath a beautiful Earth to future generations.

This is SANYO's Brand Vision - Think GAIA.

As a leading provider of Environment- and Energy-related products,

SANYO seeks to harness its exclusive, unique technology and innovative creativity to deliver global solutions.

All for the Earth. All for life. All for GAIA.



The ever-evolving SANYO "ECO *i*" series.

The ECO-i series is designed for energy savings, easy installation, and high efficiency. Always continuing to evolve, Sanyo uses advanced technologies to meet the requirements of diverse situations and contribute to the creation of comfortable living spaces.

MINI ECO *i*

3-phase line-up

Type for light commercial use



- Top class COP=4.06 (In case of 4HP cooling)
- 9 indoor units can be connected to 1 outdoor unit. (In case of 6 HP)
- It is possible to perform cooling operation at outdoor temperatures down to -10°C.
- Wide model range: single-phase and three-phase



2 WAY ECO *i* 5N series

Type with selection of cooling or heating operation



- Top class COP=3.90(In case of 8 HP average)
- Wide range of product for narrower installation space New 14 & 16 HP
- It is possible to perform cooling operation at outdoor temperatures down to -10°C.



3 WAY ECO *i*

Type with simultaneous heating and cooling operation

Heat Recovery Type








- Simultaneous cooling or heating operation for up to 40 indoor units
- Conforms to COP3.94* as the top class in the industry
- ** Average cooling and heating value for 8 HP outdoor unit
- Realization of the smallest installation space, top class in the industry
- Rotation operation function and back-up operation function provided








SANYO MULTI SYSTEM AIR CONDITIONERS







OUTDOOR UNITS LINE-UP

MINI ECO <i>i</i>											4 HP			
Model name (SPW-)		Heat pump type 1-phase					Heat pump type 3-phase							
		CR365GXH56B					CR365GXH8B							
2 WAY ECO <i>i</i> 5N series														
HP		8	10	12	14	16	18 (8+10)	20 (10+10)	22 (10+12)	24 (10+14)				
Model name (SPW-)		C0705DXHN8	C0905DXHN8	C1155DXHN8	C1305DXHN8	C1405DXHN8	C0705DXHN8 C0905DXHN8	C0905DXHN8 C0905DXHN8	C0905DXHN8 C1155DXHN8	C0905DXHN8 C1305DXHN8				
3 WAY ECO <i>i</i>														
HP		8	10	12	14	16	18 (8+10)	20 (10+10)	22 (10+12)	24 (10+14)				
Model name (SPW-)		CR704GDZH8B	CR904GDZH8B	CR1154GDZH8B	CR1304GDZH8B	CR1404GDZH8B	CR704GDZH8B CR904GDZH8B	CR904GDZH8B CR904GDZH8B	CR904GDZH8B CR1154GDZH8B	CR904GDZH8B CR1304GDZH8B				







INDOOR UNITS LINE-UP

Model size			7	9	12	16	18
Capacity	kW	Cooling/Heating	2.2/2.5	2.8/3.2	3.6/4.2	4.5/5.0	5.6/6.3
	BTU/h	Cooling/Heating	7,500/8,500	9,600/11,000	12,000/14,000	15,000/17,000	19,000/21,000
XM type (600 x 600) Semi-Concealed Cassette 4-Way Air Discharge 			SPW-XM075XH Panel PNR-XM185	SPW-XM095XH Panel PNR-XM185	SPW-XM125XH Panel PNR-XM185	SPW-XM165XH Panel PNR-XM185	SPW-XM185XH Panel PNR-XM185
X type Semi-Concealed Cassette 4-Way Air Discharge 			SPW-X075XH Panel PNR-XD484GHAB	SPW-X095XH Panel PNR-XD484GHAB	SPW-X125XH Panel PNR-XD484GHAB	SPW-X165XH Panel PNR-XD484GHAB	SPW-X185XH Panel PNR-XD484GHAB
XMR type (600 x 600) Semi-Concealed Cassette 4-Way Air Discharge 			SPW-XMR74EXH56B Panel PNR-XM184EHA	SPW-XMR94EXH56B Panel PNR-XM184EHA	SPW-XMR124EXH56B Panel PNR-XM184EHA	SPW-XMR164EXH56B Panel PNR-XM184EHA	SPW-XMR184EXH56B Panel PNR-XM184EHA
SR type Semi-Concealed Cassette 2-Way Air Discharge 			SPW-SR74GXH56B Panel PNR-S124GHB	SPW-SR94GXH56B Panel PNR-S124GHB	SPW-SR124GXH56B Panel PNR-S124GHB	SPW-SR164GXH56B Panel PNR-S124GHB	SPW-SR184GXH56B Panel PNR-S124GHB
ADR type Semi-Concealed Cassette 1-Way Air Discharge 			SPW-ADR74GXH56B Panel PNR-AD124GHB	SPW-ADR94GXH56B Panel PNR-AD124GHB	SPW-ADR124GXH56B Panel PNR-AD124GHB		
LDR type Semi-Concealed Slim Cassette 				SPW-LDR94GXH56B Panel PNR-LD254GHAB	SPW-LDR124GXH56B Panel PNR-LD254GHAB	SPW-LDR164GXH56B Panel PNR-LD254GHAB	SPW-LDR184GXH56B Panel PNR-LD254GHAB
U type Concealed Duct 			SPW-U075XH	SPW-U095XH	SPW-U125XH	SPW-U165XH	SPW-U185XH
UR type Concealed-Rectangle Duct 			SPW-U075SXHT	SPW-U095SXHT	SPW-U125SXHT	SPW-U165SXHT	SPW-U185SXHT
US type Concealed Duct 			SPW-US075XH	SPW-US095XH	SPW-US125XH	SPW-US165XH	SPW-US185XH
FUR type Floor/Ceiling Slim Concealed Duct 			SPW-FUR74EXH56B	SPW-FUR94EXH56B	SPW-FUR124EXH56B	SPW-FUR164EXH56B	SPW-FUR184EXH56B
UMR type Concealed Duct 			SPW-UMR74EXH56B	SPW-UMR94EXH56B	SPW-UMR124EXH56B	SPW-UMR164EXH56B	SPW-UMR184EXH56B
DR type Concealed Duct High-Static Pressure 							
T type Ceiling-Mounted Units 					SPW-T125XH	SPW-T165XH	SPW-T185XH
FTR type Floor/Ceiling Mounted Units 			SPW-FTR74EXH56B	SPW-FTR94EXH56B	SPW-FTR124EXH56B	SPW-FTR164EXH56B	SPW-FTR184EXH56B
K type Wall Mounted Units 			SPW-K075XH	SPW-K095XH	SPW-K125XH		
KR type Wall-Mounted Units 			SPW-KR74GXH56B	SPW-KR94GXH56B	SPW-KR124GXH56B	SPW-KR164GXH56B	SPW-KR184GXH56B
FMR type Concealed Floor Standing Units 			SPW-FMR74GXH56B	SPW-FMR94GXH56B	SPW-FMR124GXH56B	SPW-FMR164GXH56B	SPW-FMR184GXH56B
FR type Floor Standing Units 			SPW-FR74GXH56B	SPW-FR94GXH56B	SPW-FR124GXH56B	SPW-FR164GXH56B	SPW-FR184GXH56B
GU type Total Heat Exchanger with DX coil 				SPW-GU055XH		SPW-GU075XH	SPW-GU105XH

CONTROL EQUIPMENT LINE-UP

Wired remote controller	Wireless remote controller				
RCS-TM80BG	For all indoor units	XM type	X type	XMR, SR, FTR type	ADR, T, LDR type
	RCS-BH80BG.WL	RCS-XM18BG.WL	RCS-SH80BG.WL	RCS-SS80BG.WL	RCS-TRP80BG.WL
					
	RCS-BH80BG.WL	RCS-BH80BG.WL	RCS-BH80BG.WL	RCS-BH80BG.WL	RCS-BH80BG.WL

"ECO i" SERIES LINE-UP

5 HP 					6 HP 							
Heat pump type 1-phase		Heat pump type 3-phase			Heat pump type 1-phase				Heat pump type 3-phase			
CR485GXH56B		CR485GXH8B			CR605GXH56B				CR605GXH8B			
												
26 (10+16)	28 (12+16)	30 (14+16)	32 (16+16)	34 (10+10+14)	36 (10+10+16)	38 (10+12+16)	40 (10+14+16)	42 (10+16+16)	44 (12+16+16)	46 (14+16+16)	48 (16+16+16)	
C0905DXHN8 C1405DXHN8	C1155DXHN8 C1405DXHN8	C1305DXHN8 C1405DXHN8	C1405DXHN8 C1405DXHN8	C0905DXHN8 C0905DXHN8 C1305DXHN8	C0905DXHN8 C0905DXHN8 C1405DXHN8	C0905DXHN8 C1155DXHN8 C1405DXHN8	C0905DXHN8 C1305DXHN8 C1405DXHN8	C0905DXHN8 C1405DXHN8 C1405DXHN8	C1155DXHN8 C1405DXHN8 C1405DXHN8	C1305DXHN8 C1405DXHN8 C1405DXHN8	C1405DXHN8 C1405DXHN8 C1405DXHN8	
												
26 (10+16)	28 (12+16)	30 (14+16)	32 (16+16)	34 (10+10+14)	36 (10+10+16)	38 (10+12+16)	40 (10+14+16)	42 (10+16+16)	44 (12+16+16)	46 (14+16+16)	48 (16+16+16)	
CR904GDZH8B CR1404GDZH8B	CR1154GDZH8B CR1404GDZH8B	CR1304GDZH8B CR1404GDZH8B	CR1404GDZH8B CR1404GDZH8B	CR904GDZH8B CR904GDZH8B CR1304GDZH8B	CR904GDZH8B CR904GDZH8B CR1404GDZH8B	CR904GDZH8B CR1154GDZH8B CR1404GDZH8B	CR904GDZH8B CR1304GDZH8B CR1404GDZH8B	CR904GDZH8B CR1404GDZH8B CR1404GDZH8B	CR1154GDZH8B CR1404GDZH8B CR1404GDZH8B	CR1304GDZH8B CR1404GDZH8B CR1404GDZH8B	CR1404GDZH8B CR1404GDZH8B CR1404GDZH8B	

22	25	30	36	48	60	76	96
6.4/7.0	7.3/8.0	9.0/10.0	10.6/11.4	14.0/16.0	16.0/18.0	22.4/25.0	28.0/31.5
22,000/24,000	25,000/27,000	30,000/34,000	36,000/39,000	47,800/54,600	54,600/61,500	76,400/85,300	95,500/107,500
	SPW-X255XH Panel PNR-XD484GHAB		SPW-X365XH Panel PNR-XD484GHAB	SPW-X485XH Panel PNR-XD484GHAB	SPW-X605XH Panel PNR-XD484GHAB		
	SPW-SR254GXH56B Panel PNR-S253GHANB						
	SPW-LDR254GXH56B Panel PNR-LD254GHAB						
	SPW-U255XH		SPW-U365XH	SPW-U485XH	SPW-U605XH		
	SPW-U255SXHT	SPW-U305SXHT	SPW-U365SXHT	SPW-U485SXHT	SPW-U605SXHT		
SPW-FUR224EXH56B							
SPW-UMR224EXH56B							
	SPW-DR254GXH56B		SPW-DR364GXH56B	SPW-DR484GXH56B		SPW-DR764GXH56B	SPW-DR964GXH56B
	SPW-T255XH		SPW-T365XH	SPW-T485XH			
SPW-FTR224EXH56B							
	SPW-KR254GXH56B						
	SPW-FMR254GXH56B						
	SPW-FR254GXH56B						

K type	Web application							
RCS-SH1BG	Simplified remote controller RCS-KR1AGB	Schedule timer SHA-TM64AGB	System controller SHA-KC64AGB	Intelligent controller SHA-KT256EG	Communication adapter SHA-KA128AGB	Serial/parallel I/O unit ACC-SP16TAG	LonWorks interface SHA-LN16UGB	Remote sensor ART-K45AGB
								

MINI ECO-i

2 WAY ECO-i 5N series

3 WAY ECO-i

INDOOR UNITS

OPTIONAL PARTS

MINI ECO i MULTI SYSTEM

***Newly developed "MINI
satisfy a wider variety of***

The MINI ECO-i has been developed as a higher-efficiency product that will appeal to a broader range of users. It's ideal for small offices and shops, and combined with the ECO Family Series, it can create a system that will satisfy any building owner.



***More
Efficiency***

Installation available even
in narrow space

***More
Selectable
for designers***



ECO-i", the perfect solution to customers' needs



MINI ECO-i

2 WAY ECO-i 5N series

3 WAY ECO-i

INDOOR UNITS

OPTIONAL PARTS

"MINI ECO *i*" series (4, 5, 6 HP)

For light commercial use



3-phase line-up

- **Top class COP=4.06**
(In case of 4 HP cooling)
- **DC Inverter compressor of twin rotary type**
- **DC FAN motor**
- **Adoption of R410A**
- **Space saving**
- **Easier installation**
- **9 indoor units connectable** (In case of 6 HP)
- **It's possible to perform cooling operation at outdoor temperatures down to -10°C**
- **Piping length is extended to 150m**
- **Quiet operation mode**
- **Wide model range : Single phase and 3-phase power supply**

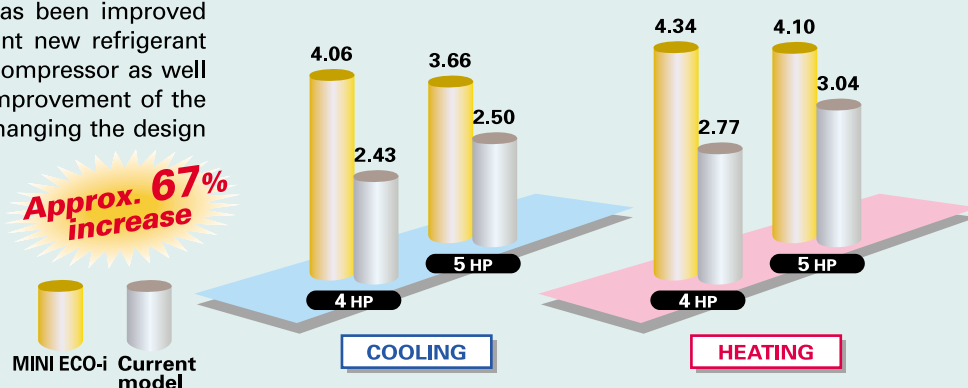


MINI ECO-i MULTI SYSTEM

More excellent energy saving

The operation efficiency has been improved by using the highly efficient new refrigerant R410A and a DC inverter compressor as well as a new DC fan motor, improvement of the air speed distribution by changing the design of the heat exchanger.

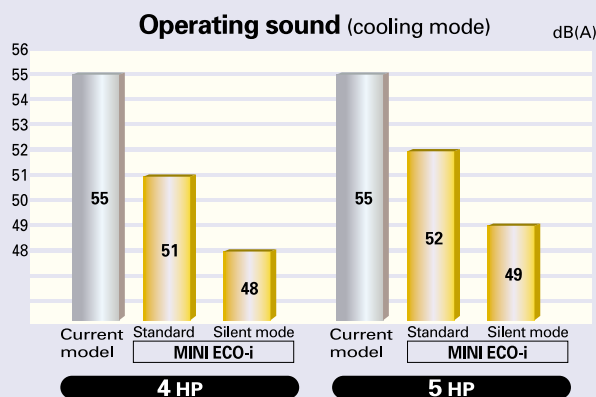
Approx. 67% increase



Low-operating sound design in the top class of the industry

The DC Inverter Air Conditioner uses a twin rotary compressor. Compared to the conventional single cylinder type, the twin rotary compressor dramatically reduces vibration and noise during operation, thus ensuring quiet operation.

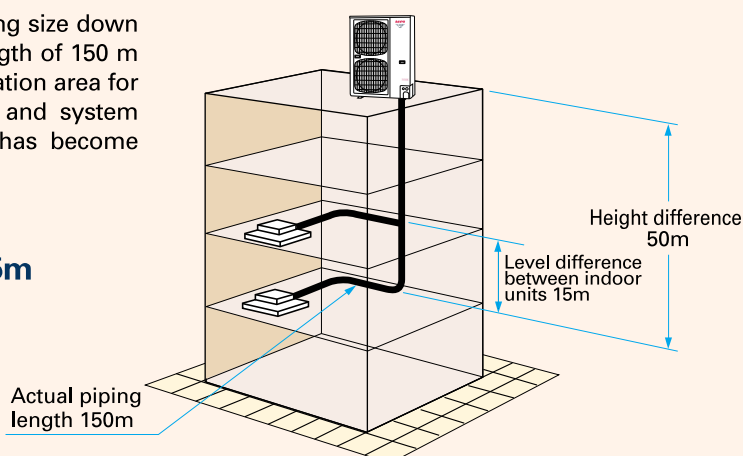
* The rated capacity cannot be performed in silent mode.



Correspondence to long piping

The reduction in the refrigerant volume by piping size down has extended the piping length to an actual length of 150 m and a total length of 200 m. The possible installation area for indoor and outdoor units has been widened and system deployment with a high degree of freedom has become possible.

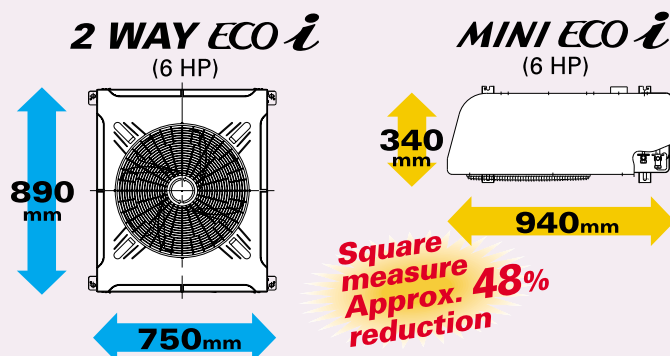
Actual piping length 70m ➔ 150m
Equivalent piping length 120m ➔ 175m
Total piping length 150m ➔ 200m





Space saving

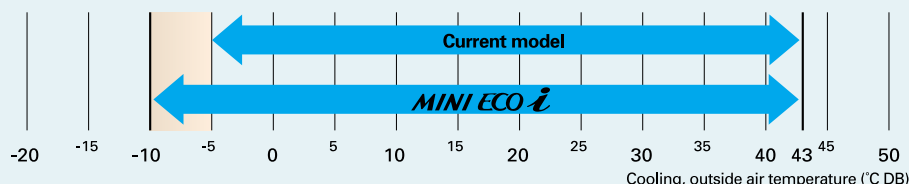
The unit offers significant space-saving advantages over the conventional model (6HP), so it can be installed on a veranda or other narrow space.



Extended operating range

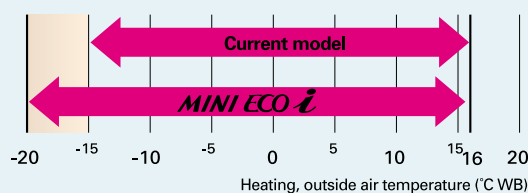
Cooling operation range:

- The cooling operation range has been extended from -5°C to -10°C by changing the outdoor fan to an inverter type.



Heating operation range:

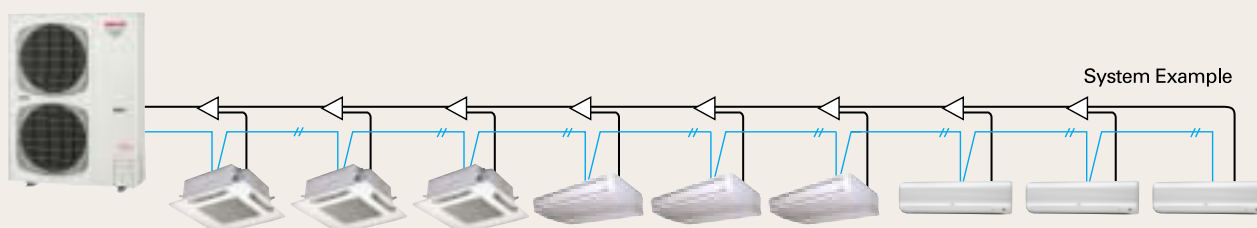
- Stable heating operation even with an outside air temperature of -20°C
- The heating operation range has been extended from -15°C to -20°C by use of a compressor with a high-pressure vessel.



- Wide temperature setting range

[Wired remote control heating temperature setting range]
Conventional MULTI: 16 to 26°C
ECO-i Series: 16 to 30°C

Increased max. number of connectable indoor units



System (HP)	4	5	6
Connectable indoor units	6	8	9

MINI ECO i

MULTI SYSTEM



■ Outdoor unit specifications

HP			4		5		6	
Model name (SPW-)			Heat pump type		Heat pump type		Heat pump type	
			CR365GXH56B	CR365GXH8B	CR485GXH56B	CR485GXH8B	CR605GXH56B	CR605GXH8B
Power supply			220/230/240V-1 phase/50, 60Hz	380/400/415V-3 phase/50, 60Hz	220/230/240V-1 phase/50, 60Hz	380/400/415V-3 phase/50, 60Hz	220/230/240V-1 phase/50, 60Hz	380/400/415V-3 phase/50, 60Hz
Capacity	Cooling	(kW)	11.2		14.0		15.5	
		(BTU/h)	38,200		47,800		52,900	
	Heating	(kW)	12.5		16.0		17.6	
		(BTU/h)	42,700		54,600		60,000	
COP	Cooling (W/W)	4.06		3.66		3.39		
	Heating (W/W)	4.34		4.10		3.84		
Dimension (H×W×D) (mm)			1,230×940× 340					
Net weight (kg)			104					
Electrical rating	Cooling	Running amperes (A)	14.8/14.1/13.5	4.56/4.34/4.18	20.5/19.6/18.8	6.20/6.02/5.80	24.4/23.4/22.4	7.40/7.18/6.92
		Power input (kW)	2.76		3.83		4.57	
	Heating	Running amperes (A)	15.4/14.7/14.1	4.76/4.52/4.36	20.8/19.9/19.1	6.31/6.13/5.90	24.5/23.4/22.5	7.41/7.19/6.93
		Power input (kW)	2.88		3.90		4.58	
Color (munsell color chart)			Silky shade (1Y8.5/0.5)					
Air circulation (m³/min)			100		100		100	
Refrigerant amount at shipment (kg)			3.5		3.5		3.5	
Piping connections	Gas pipe (Flare) (mm)	ø15.88				ø19.05 * ¹		
	Liquid pipe (Flare) (mm)	ø9.52						
Ambient temperature operating range			Cooling: -10℃ DB~+ 43℃ DB, heating: -20℃ WB ~ +15℃ WB					
Maximum number of connectable indoor units			6		8		9	
Pressure sound	Normal mode dB(A)	51		51		52		
	Silent mode dB(A)	48		48		49		
Power sound	Normal mode dB(A)	67		67		68		

* The values for performance and electric characteristics apply under the following test conditions.

Data subject to change without notice.

At the time of cooling: Indoor suction air temperature 27°C DB, 19°C WB, outdoor suction air temperature 35°C DB

At the time of heating: Indoor suction air temperature 20°C DB, outdoor suction air temperature 7°C DB, 6°C WB

* The operating sound has been measured in an anechoic chamber, and it is the value one meter in front of the outdoor unit at a height of 1.5 m. With actual installation, the indication value normally differs widely according to the surrounding noise and reverberations.

*1; Tube discharge assy supplied with outdoor unit

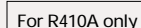
■ Optional parts

Model name	Cooling capacity after distribution	Remarks
APR-P160BG	22.4 kW or less	For indoor unit

Model No.	Valve connecting tube size (mm)		Indoor unit where used
	Gas tube	Liquid tube	Total capacity of indoor units after the valve
BV-RXP160AGB	15.88	9.52	16.0 kW or less
BV-RXP56AGB	12.7	6.35	5.6 kW or less

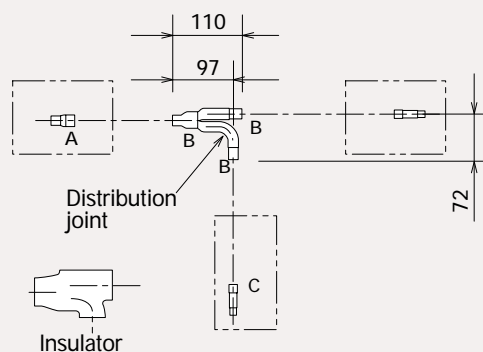


Dimension : mm



(mm)

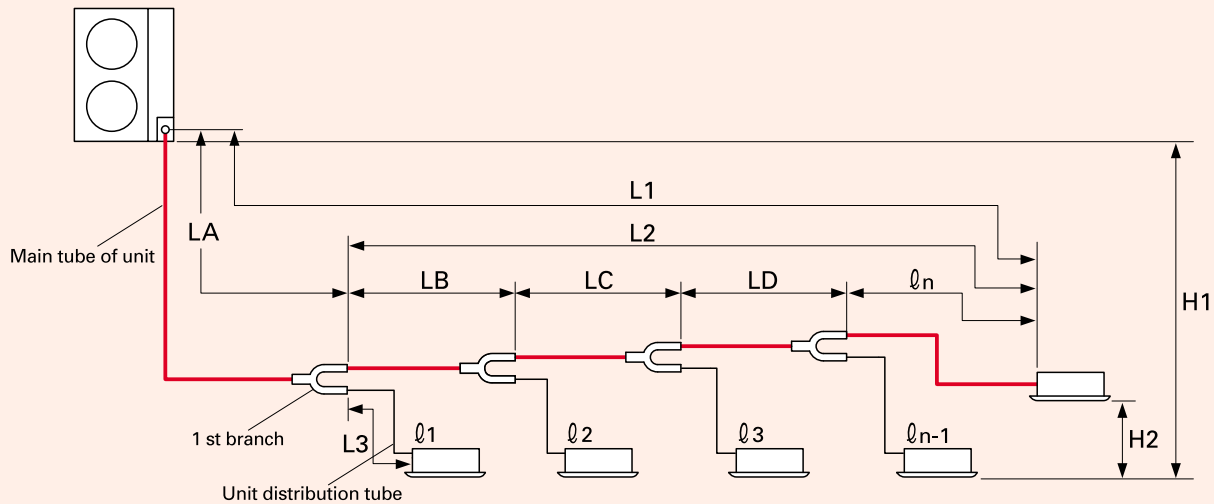
(Capacity after distribution joint is 22.4 kW or less.)



MINI ECO i

MULTI SYSTEM

■ Piping design



Note: Do not use commercially available T-joints for the liquid tubing.

Be sure to use special R410A distribution joints (APR: purchased separately) for outdoor unit connections and tubing branches.

R410A distribution joint
APR-P160BG (for indoor unit)

■ Ranges that apply to refrigerant tubing lengths and to differences in installation heights

Items	Marks	Contents	Length (m)
Allowable tubing length	L1	Max. piping length	Actual piping length ≤ 150
			Equivalent piping length ≤ 175
	$\Delta L (L2 - L3)$	Difference between the max. length and the min. Length from the No.1 distribution joint	≤ 40
	$l_1, l_2 \sim l_n$	Max. length of each distribution tube	≤ 30
	$l_1 + l_2 + \dots + l_{n-1} + l_n$	Total max. tubing length including length of each distribution tube (only narrow tubing)	≤ 200
Allowable elevation difference	H1	When outdoor unit is installed higher than indoor unit	≤ 50
		When outdoor unit is installed lower than indoor unit	≤ 40
	H2	Max. difference between indoor units	≤ 15

L = Length, H = Height

■ Main tubing size (LA)

kW	11.2	14.0	15.5
System horsepower	4	5	6
Gas tubing (mm)	$\phi 15.88$		$\phi 19.05$
Liquid tubing (mm)	$\phi 9.52$		

■ System limitations

Outdoor units (Type)	365	485	605
Number of max. connectable indoor units	6	8	9
Max. allowable indoor/ outdoor capacity ratio	50 - 130%		

■ Main tubing size after distribution (LB, LC...)

Total capacity after distribution	Below kW	7.1 (2.5 hp)	11.2 (4 hp)	14.0 (5 hp)	15.5 (6 hp)
	Over kW	—	7.1 (2.5 hp)		
Tubing size	Gas tubing (mm)	$\phi 12.7$	$\phi 15.88$		
	Liquid tubing (mm)	$\phi 9.52$	$\phi 9.52$		

Unit: mm
hp = horsepower

Note: In case the total capacity of connected indoor units exceeds the total capacity of the outdoor units, select the main tubing size for the total capacity of the outdoor units.

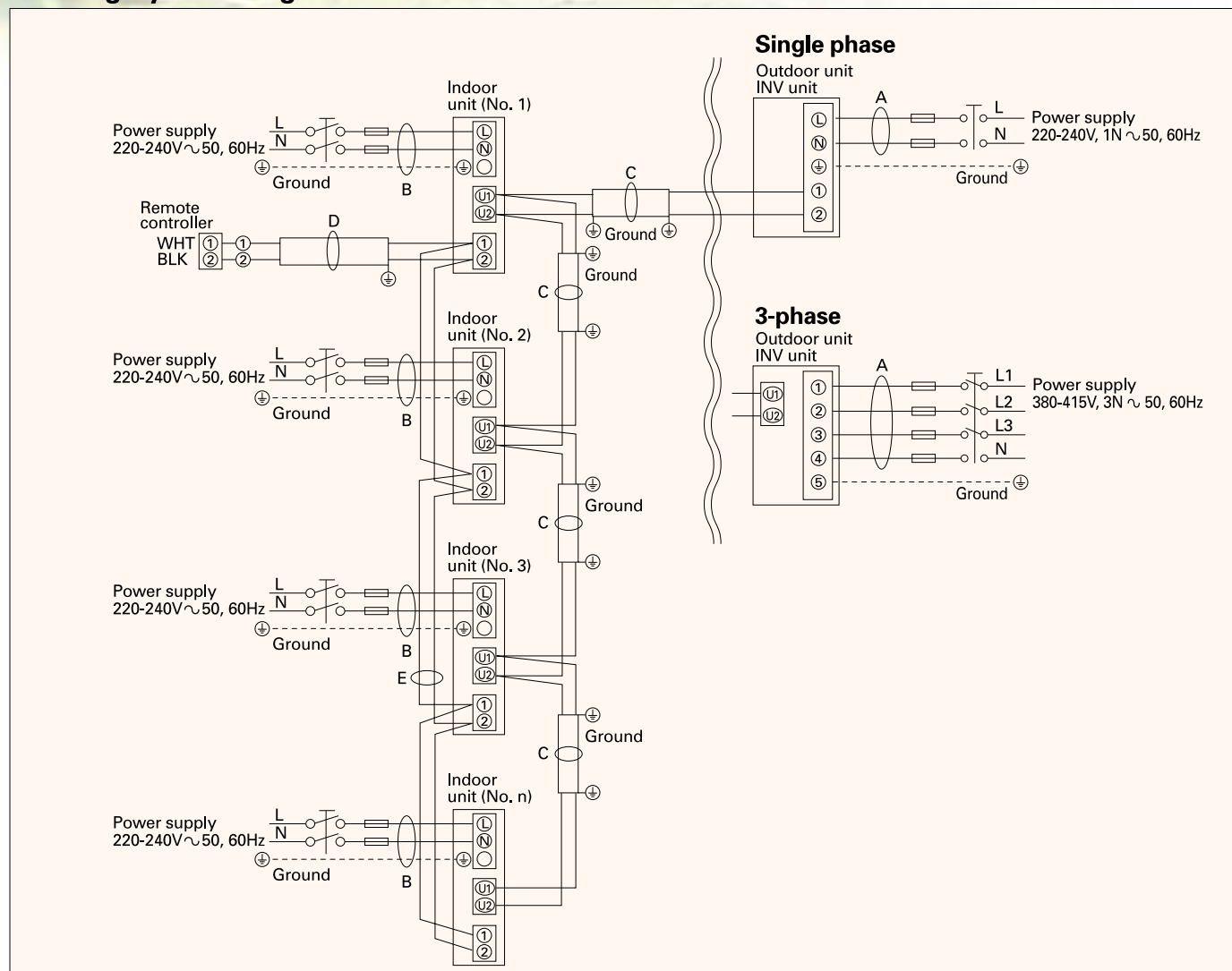
■ Indoor unit tubing connection ($l_1, l_2 \dots l_{n-1}$)

Indoor unit type	7	9	12	16	18	25	36	48	60
Gas tubing (mm)	$\phi 12.7$					$\phi 15.88$			
Liquid tubing (mm)	$\phi 6.35$					$\phi 9.52$			

Unit: mm



■ Wiring System Diagram



MINI ECO-i

2 WAY ECO-i 5N series

3 WAY ECO-i

INDOOR UNITS

OPTIONAL PARTS



2WAY ECO *i*

5N series

MULTI SYSTEM

***Large-capacity multi systems
from Sanyo!***



with use of R410A with advanced technology



"2WAY ECO i"

5N series (8 to 48 HP)



High-efficiency large-capacity multi system

A high-performance multi system with excellent energy savings and work execution characteristics for buildings.

High performance and various options contribute to the creation of comfortable space meeting various needs.

- **Top class COP=3.90** (In case of 8 HP average)
- **Twin rotary DC Inverter compressor**
- **DC FAN motor**
- **Space saving outdoor unit New 14 & 16HP**
- **New heat exchanger**
- **All model is the same size for easier installation.**



MINI ECO-i

2WAY ECO-i 5N series

3WAY ECO-i

INDOOR UNITS

OPTIONAL PARTS

2 WAY ECO-i

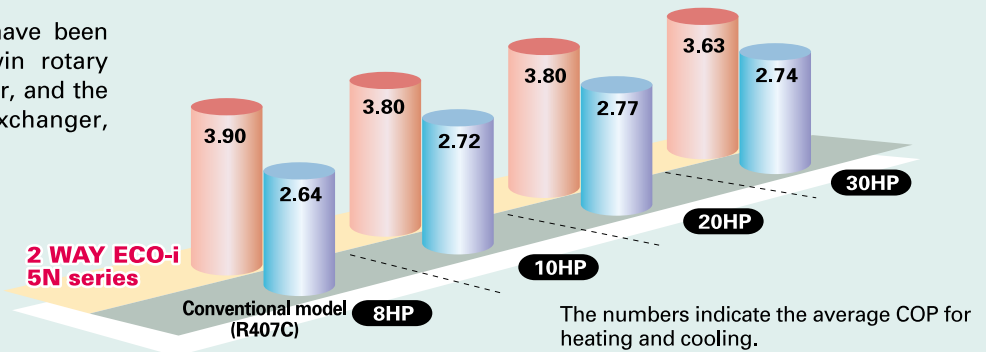
5N series

MULTI SYSTEM

High efficiency and large

More excellent energy saving

Wide efficiency increases have been realized by use of DC twin rotary compressors, new fan motor, and the improvement of heat exchanger, constant speed compressor.



Line-up expansion

The 2 WAY ECO-i 5N series has all five DC inverter outdoor units from 8 HP to 16 HP as the basic models, and by combination of up to three units, an air-conditioning capacity 8 HP to 48 HP can be set according to the user needs.

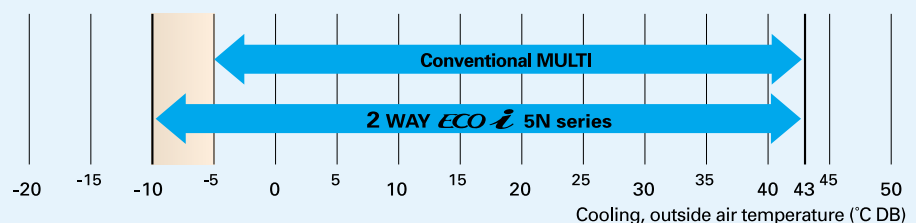
HP	8	10	12	14	16	18	20	22	24	26	28
2 WAY ECO-i 5N series	○	○	○	○	○	○	○	○	○	○	○
Inverter unit	8	10	12	14	16	10	10	12	14	16	16
						8	10	10	10	10	12

HP	30	32	34	36	38	40	42	44	46	48
2 WAY ECO-i 5N series	○	○	○	○	○	○	○	○	○	○
Inverter unit	16	16	14	16	16	16	16	16	16	16
	14	16	10	10	12	14	16	16	16	16
			10	10	10	10	10	12	14	16

Extended operating range

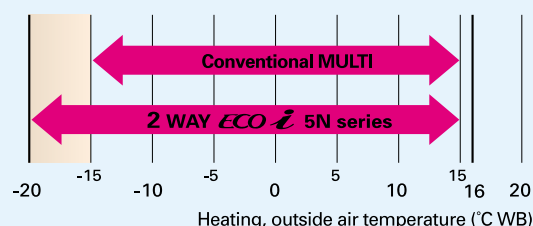
Cooling operation range:

- The cooling operation range has been extended from -5°C to -10°C by changing the outdoor fan to an inverter type.



Heating operation range:

- Stable heating operation even with an outside air temperature of -20°C
- The heating operation range has been extended from -15°C to -20°C by use of a compressor with a high-pressure vessel.



capacity multi adopts **R410A** refrigerant



MINI ECO-i

2 WAY ECO-i 5N series

3 WAY ECO-i

INDOOR UNITS

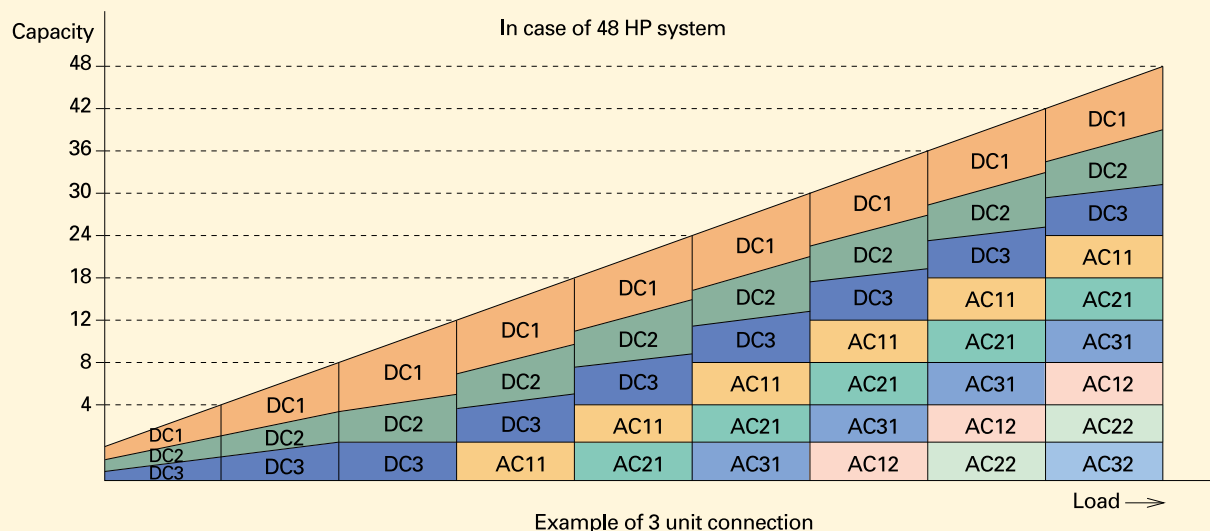
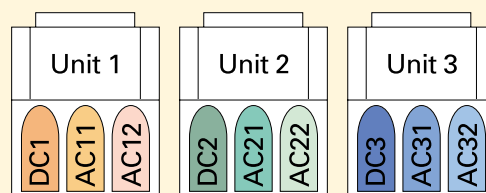
OPTIONAL PARTS

Realization of smooth capacity control from 0.8HP to 48HP

Capacity control is possible smoothly with a DC inverter compressor. The lower graph shows the image of the operating combination of compressors in case of 48 HP system. In actual operation, the combination will be changed by operating condition, operating time amount, priority of compressor and so on.

Comp. HP	Unit 1 (main)	Unit 2 (sub 1)	Unit 3 (sub 2)
DC comp.	4.0	4.0	4.0
AC1 comp.	6.0	6.0	6.0
AC2 comp.	6.0	6.0	6.0

*48 HP = SPW-C1405DXH8 x 3



- An emergency backup function is provided
- Long piping design

Actual piping length 100m ➡ 150m
Total piping length 150m ➡ 300m

- Increased max. number of connectable indoor units

System (HP)	8	10	12	14	16	18	20	22	24~48
Connectable indoor units	13	16	19	23	26	29	33	36	40

2WAY ECO-i

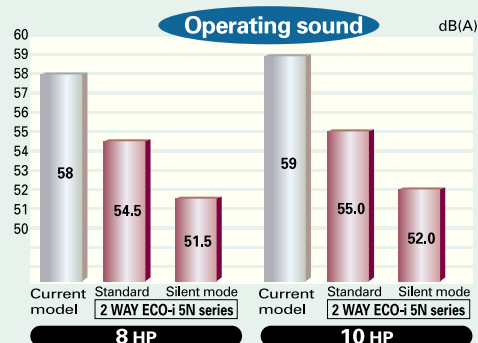
5N series

MULTI SYSTEM

High efficiency and large

Smallest installation space in the industry! Further reduction of the operating sound

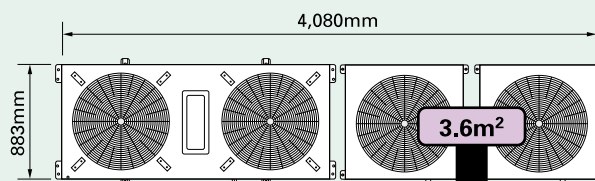
The five DC inverter types from 8 HP to 16 HP have been unified to the same external dimensions by using a two-room construction with the compressor and other structural parts at the lower room of the outdoor unit and the heat exchanger at the upper room of the outdoor unit. In this way, the smallest installation space in the industry and low operating sound have been realized.



Compared with a conventional unit

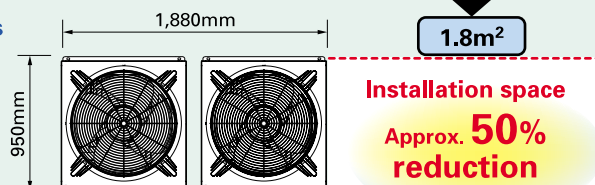
With a 32 HP-equivalent setup of two 16 HP-equivalent units

Conventional model



Weight:
990 kg

2WAY ECO-i 5N series



Weight:
690 kg

Approx. 30%
reduction

Compact design effectively uses empty space

Parking lot expansion, warehouse installation, etc.

capacity multi adopts **R410A** refrigerant



MINI ECO-i

2 WAY ECO-i 5N series

3 WAY ECO-i

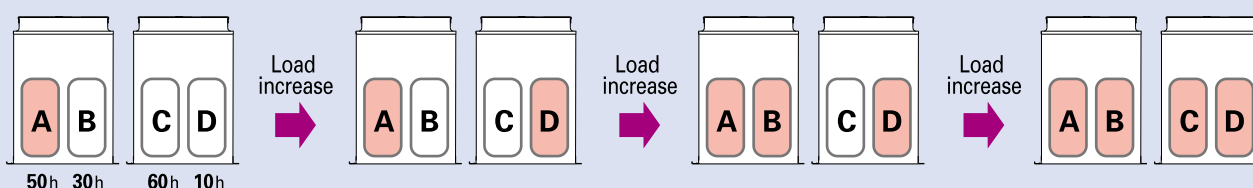
INDOOR UNITS

OPTIONAL PARTS

Extended compressor life by uniform compressor operation times

The total operation time of the compressors is monitored by a microcomputer, so that there is no unbalance for the operation times of all compressors in the same refrigerant system, and compressors with a shorter operation time are operated with preference.

System example A, C: DC inverter compressor B, D: Constant speed compressor

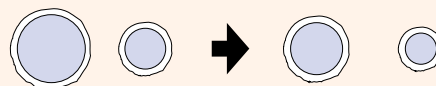


Reduction of the piping cost and construction labor by smaller piping size

By adoption of R410A with low pressure loss, it was possible to reduce the piping sizes for gas pipes and liquid pipes. This makes it possible to aim for reduced piping space, improved workability at the site, and reduction of the piping material costs.

Example: In case of 10 HP

28.58mm 12.7mm 22.22mm 9.52mm



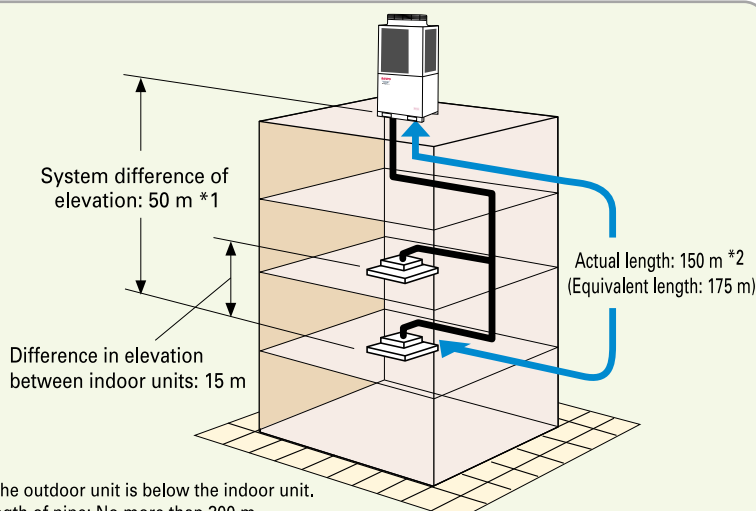
(mm)

HP	Conventional model		2 WAY ECO-i 5N series	
	Gas pipe	Liquid pipe	Gas pipe	Liquid pipe
8	25.4	12.7	19.05	9.52
10	28.58	12.7	22.22	9.52

Correspondence to long piping in the top class of the industry

The reduction in the refrigerant volume by piping size down has extended the piping length to an actual length of 150 m and a total length of 300 m, the top class in the industry. The possible installation area for indoor and outdoor units has been widened and system deployment with a high degree of freedom has become possible.

Actual piping length: 150m
Equivalent piping length: 175m
Total piping length: 300m



*1: 40 m if the outdoor unit is below the indoor unit.
 *2: Total length of pipe: No more than 300 m


2WAY ECO *i*

5N series

MULTI SYSTEM

Outdoor unit specifications,

■ Outdoor unit specifications

Appearance							
HP			8	10	12	14	16
Model name (SPW-)			C0705DXHN8	C0905DXHN8	C1155DXHN8	C1305DXHN8	C1405DXHN8
Power supply			380/400/415V-3 phase/50Hz				
Capacity	Cooling	(kW)	22.4	28.0	33.5	40.0	45.0
		(BTU/h)	76,400	95,500	114,300	136,500	153,600
	Heating	(kW)	25.0	31.5	37.5	45.0	50.0
		(BTU/h)	85,300	107,500	128,000	153,600	170,600
COP	Cooling	(W/W)	3.74	3.54	3.50	3.45	3.38
	Heating	(W/W)	4.05	4.06	3.91	3.91	3.79
Dimensions(H×W×D) (mm)			1,887 × 890 × 890 (+60)				
Net weight (kg)			245	295	295	345	345
Electrical rating	Cooling	Running amperes (A)	10.1/9.6/9.3	12.9/12.3/11.8	15.6/14.9/14.3	19.6/18.6/17.9	22.5/21.3/20.6
		Power input (kW)	5.99	7.90	9.58	11.6	13.3
	Heating	Running amperes (A)	10.4/9.9/9.5	12.7/12.0/11.6	15.7/14.9/14.3	19.4/18.5/17.8	22.3/21.2/20.4
		Power input (kW)	6.17	7.75	9.60	11.5	13.2
	Starting amperes (A)		1/1/1	59/62/64	66/69/72	68/71/73	78/80/82
Air circulation (m³/min)			150	160	180	200	220
Refrigerant amount at shipment (kg)			11.8				
Piping connection	Gas pipe (mm)	ø19.05	ø22.22	ø25.4	ø25.4	ø28.58	
	Liquid pipe (mm)	ø9.52	ø9.52	ø12.7	ø12.7	ø12.7	
	Balance pipe (mm)	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35	
Ambient temperature operating range			Cooling/dry: -10℃~-+ 43℃ (DB), Heating: -20℃ ~+15℃ (WB)				
Pressure sound	Normal mode dB(A)	54.5	55.0	56.0	61.0	62.0	
	Silent mode dB(A)	51.5	52.0	53.0	58.0	59.0	
Power sound	Normal mode dB(A)	65.5	66.5	67.5	71.5	72.0	

* The values for performance and electric characteristics apply under the following test conditions.

Data subject to change without notice.

At the time of cooling: Indoor suction air temperature 27°C DB, 19°C WB, outdoor suction air temperature 35°C DB

At the time of heating: Indoor suction air temperature 20°C DB, outdoor suction air temperature 7°C DB, 6°C WB

* The operating sound has been measured in an anechoic chamber, and it is the value one meter in front of the outdoor unit at a height of 1.5 m. With actual installation, the indication value normally differs widely according to the surrounding noise and reverberations.

optional parts, external dimension drawings



MINI ECO-i

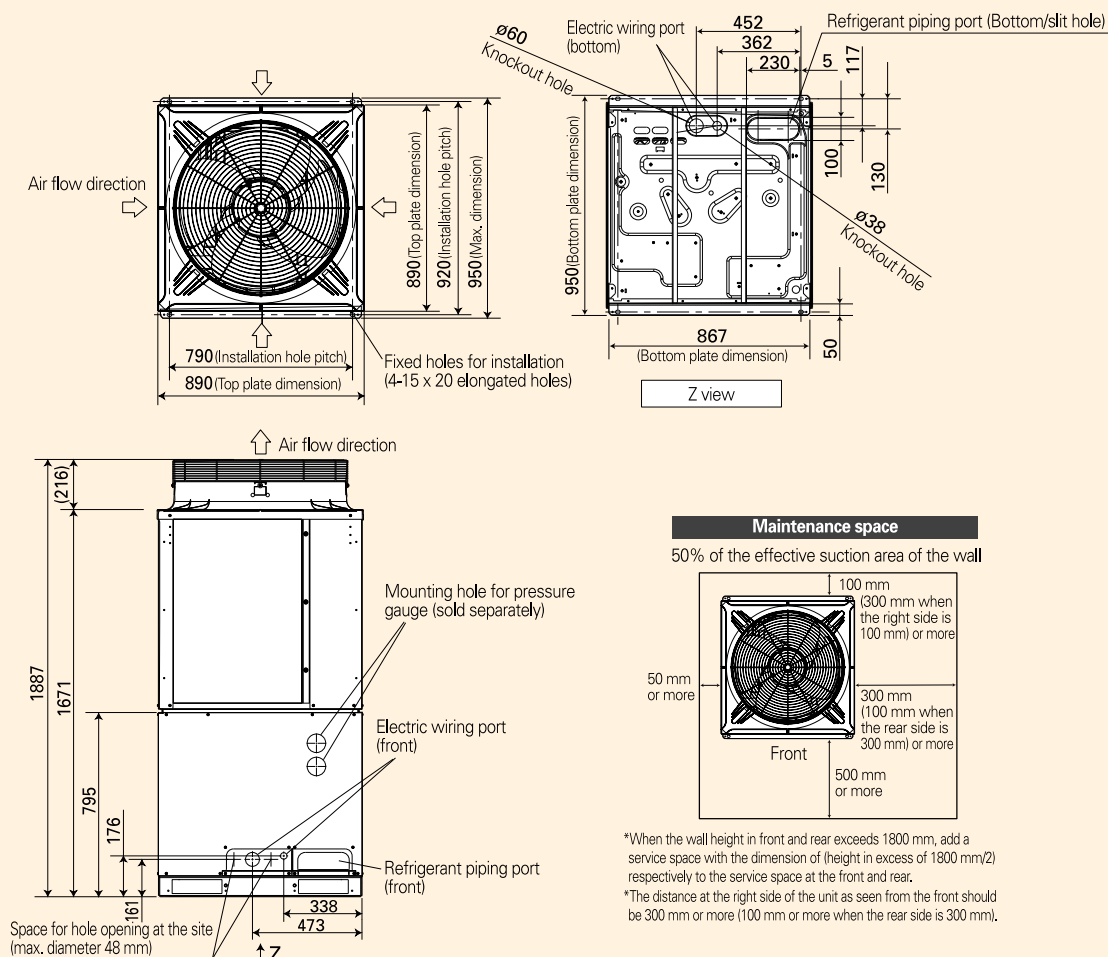
2 WAY ECO-i 5N series

3 WAY ECO-i

INDOOR UNITS

OPTIONAL PARTS

External dimension drawings



Optional parts

Distribution joint kit

< For indoor units >

- **APR-P160BG** (Capacity after distribution: 22.4 kW or lower)
- **APR-P680BG** (Capacity after distribution: Over 22.4 kW to 68.0 kW)
- **APR-P1350BG** (Capacity after distribution: Over 68.0 kW to 135.0 kW)

< For outdoor units >

- **APR-CHP680BG** (Capacity after distribution: 68.0 kW or lower)
- **APR-CHP1350BG** (Capacity after distribution: Over 68.0 kW to 135.0 kW)



2WAY ECO *i*

5N series

MULTI SYSTEM

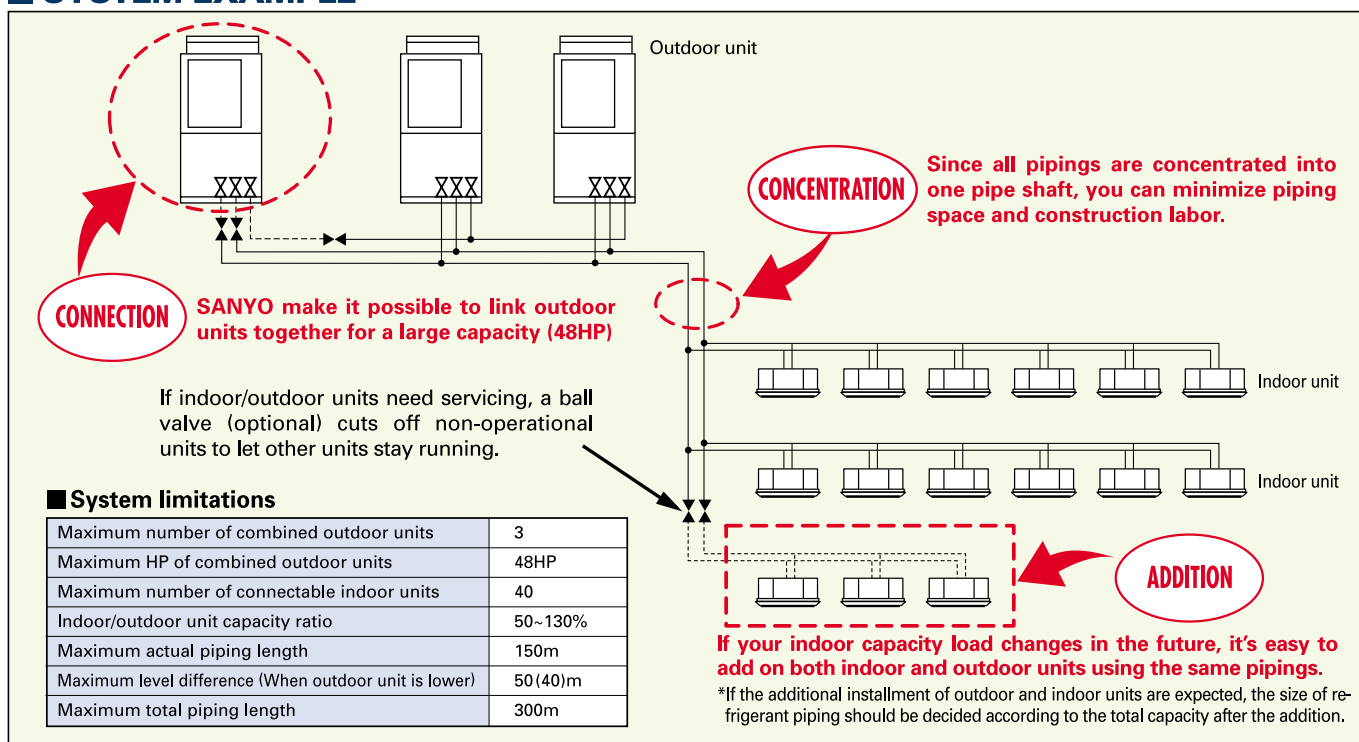
UNIT COMBINATIONS

OUTDOOR UNITS SPECIFICATIONS



Appearance												
HP			8	10	12	14	16	18	20	22	24	
Model name (SPW-)			C0705DXHN8	C0905DXHN8	C1155DXHN8	C1305DXHN8	C1405DXHN8	C0905DXHN8 C0705DXHN8	C0905DXHN8 C0905DXHN8	C1155DXHN8 C0905DXHN8	C1305DXHN8 C0905DXHN8	
Power supply			380/400/415V-3phase/50, 60Hz		380/400/415V-3phase/50Hz							
Capacity	Cooling	(kW)	22.4	28.0	33.5	40.0	45.0	50.4	56.0	61.5	68.0	
		(BTU/h)	76,400	95,500	114,300	136,500	153,600	172,000	191,100	209,900	232,000	
	Heating	(kW)	25.0	31.5	37.5	45.0	50.0	56.5	63.0	69.0	76.5	
		(BTU/h)	85,300	107,500	128,000	153,600	170,600	192,800	215,000	235,500	261,000	
COP	Cooling	(W/W)	3.74	3.54	3.50	3.45	3.38	3.63	3.54	3.51	3.49	
	Heating	(W/W)	4.05	4.06	3.91	3.91	3.79	4.06	4.06	3.97	3.96	
Dimensions (HxWxD)		(mm)	1,887 x 890 x 890 (+60)					1,887 x 1,880 x 890 (+60)				
Net weight		(kg)	245	295	295	345	345	540	590	590	640	
Electrical ratings	Cooling	Running amperes (A)	10.1/9.6/9.3	12.9/12.3/11.8	15.6/14.9/14.3	19.6/18.6/17.9	22.5/21.3/20.6	23.0/21.9/21.1	25.8/24.6/23.6	28.5/27.2/26.1	32.5/30.9/29.7	
		Power input (kW)	5.99	7.90	9.58	11.6	13.3	13.9	15.8	17.5	19.5	
	Heating	Running amperes (A)	10.4/9.9/9.5	12.7/12.0/11.6	15.7/14.9/14.3	19.4/18.5/17.8	22.3/21.2/20.4	23.1/21.9/21.1	25.4/24.0/23.2	28.4/26.9/25.9	32.1/30.5/29.4	
		Power input (kW)	6.17	7.75	9.60	11.5	13.2	13.9	15.5	17.4	19.3	
Air circulation		(m³/min)	150	160	180	200	220	150+160	160+160	160+180	160+200	
Refrigerant amount at shipment		(kg)	11.8					23.6				
Piping connections	Gas pipe	(mm)	ø19.05	ø22.22	ø25.4	ø25.4	ø28.58	ø28.58	ø28.58	ø28.58	ø28.58	
	Liquid pipe	(mm)	ø9.52	ø9.52	ø12.7	ø12.7	ø12.7	ø15.88	ø15.88	ø15.88	ø15.88	
	Balance pipe	(mm)	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35	
Ambient temperature operating range			Cooling/Dry: -10°C~+43°C (DB), Heating: -20°C~+15°C (WB)									
Operating sound	Normal mode	dB (A)	54.5	55.0	56.0	61.0	62.0	58	58	58.5	62.0	
	Silent mode	dB (A)	51.5	52.0	53.0	58.0	59.0	55	55	55.5	59.0	

Note: Rated conditions Cooling: indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

SYSTEM EXAMPLE



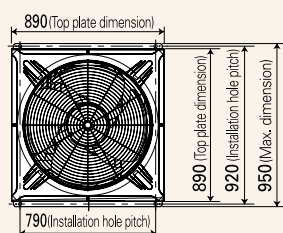


												
	26	28	30	32	34	36	38	40	42	44	46	48
	C1405DXHN8 C0905DXHN8	C1405DXHN8 C1155DXHN8	C1405DXHN8 C1305DXHN8	C1405DXHN8 C1405DXHN8	C1305DXHN8 C0905DXHN8	C1405DXHN8 C0905DXHN8	C1405DXHN8 C1155DXHN8	C1405DXHN8 C1305DXHN8	C1405DXHN8 C0905DXHN8	C1405DXHN8 C1155DXHN8	C1405DXHN8 C1305DXHN8	C1405DXHN8 C1405DXHN8
380/400/415V-3phase/50Hz												
	73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
	249,100	267,900	290,000	307,100	327,600	344,600	365,100	385,600	402,700	423,100	443,600	460,700
	81.5	87.5	95.0	100.0	108.0	113.0	119.0	127.0	132.0	138.0	145.0	150.0
	278,100	298,600	324,200	341,200	368,500	385,600	406,100	433,400	450,400	470,900	494,800	511,800
	3.44	3.43	3.41	3.38	3.50	3.47	3.47	3.45	3.42	3.43	3.40	3.38
	3.88	3.84	3.85	3.79	4.00	3.94	3.89	3.91	3.86	3.83	3.83	3.79
1,887 x 1,880 x 890 (+60)				1,887 x 2,870 x 890 (+60)								
	640	640	690	690	935	935	935	985	985	985	1,035	1,035
	35.4/33.6/32.4	38.1/36.2/34.9	42.1/39.9/38.5	45.0/42.6/41.2	45.4/43.2/41.5	48.3/45.9/44.2	51.0/48.5/46.7	55.0/52.2/50.3	57.9/54.9/53.0	60.6/57.5/55.5	64.6/61.2/59.1	67.5/63.9/61.8
	21.2	22.9	24.9	26.6	27.4	29.1	30.8	32.8	34.5	36.2	38.2	39.9
	35.0/33.2/32.0	38.0/36.1/34.7	41.7/39.7/38.2	44.6/42.4/40.8	44.8/42.5/41.0	47.7/45.2/43.6	50.7/48.1/46.3	54.4/51.7/49.8	57.3/54.4/52.4	60.3/57.3/55.1	64.0/60.9/58.6	66.9/63.6/61.2
	21.0	22.8	24.7	26.4	27.0	28.7	30.6	32.5	34.2	36.0	37.9	39.6
	160+220	180+220	200+220	220+220	160+160+200	160+160+220	160+180+220	160+200+220	160+220+220	180+220+220	200+220+220	220+220+220
23.6				35.4								
	ø31.75	ø31.75	ø31.75	ø31.75	ø31.75	ø38.1	ø38.1	ø38.1	ø38.1	ø38.1	ø38.1	ø38.1
	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05
	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35
Cooling/Dry: -10°C~+43°C (DB), Heating: -20°C~+15°C (WB)												
	63.0	63.0	64.5	65.0	63.0	63.5	63.5	65.0	65.5	65.5	66.5	67.0
	60.0	60.0	61.5	62.0	60.0	60.5	60.5	62.0	62.5	62.5	63.5	64.0

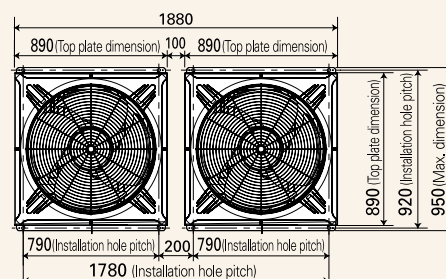
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DIMENSION OF UNIT COMBINATIONS

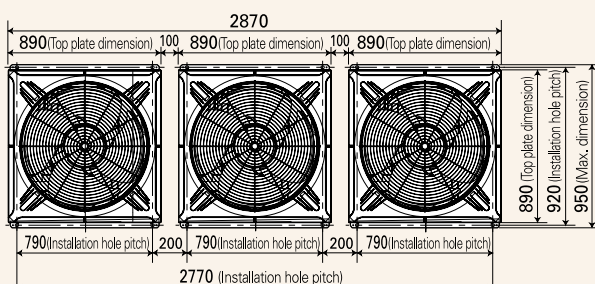
8 to 16 HP



18 to 32 HP



34 to 48 HP

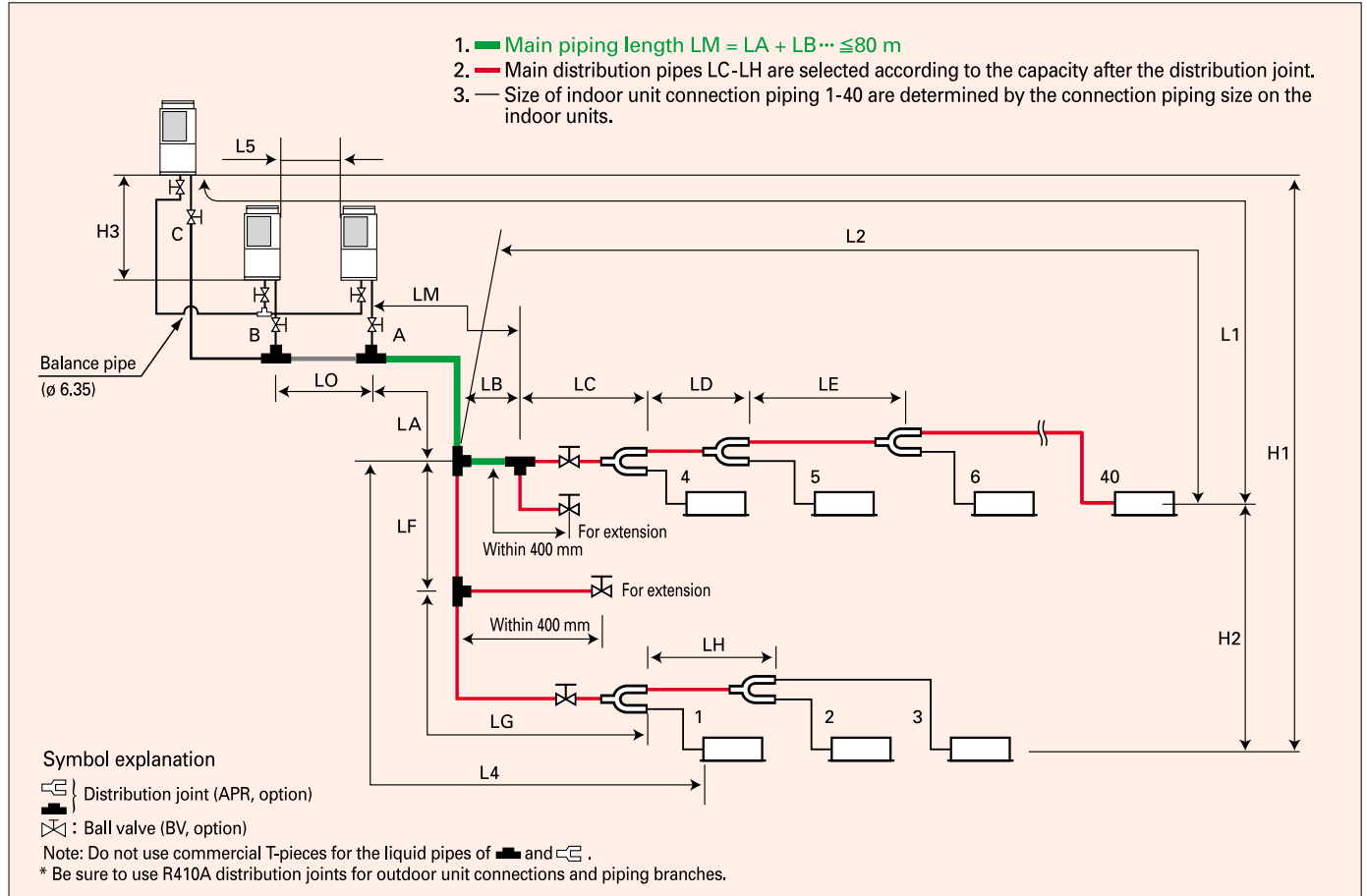


2WAY ECO i

5N series

MULTI SYSTEM

Piping design



Ranges that apply to refrigerant piping lengths and to differences in installation heights

Items	Marks	Contents	Length (m)
Allowable piping length	L1	Max. piping length	Actual piping length ≤ 150 Equivalent piping length ≤ 175
	ΔL (L2 - L4)	Difference between the max. length and the min. length from the No.1 distribution joint	≤ 40
	LM	Max. length of main piping (at max. diameter)	≤ 80
	1, 2 ~ 40	Max. length of each distribution	≤ 30
	L1+1+2+...+40 +A+B+LF+LG+LH	Total max. piping length including length of each distribution (only narrow tubing)	≤ 300
	L5	Distance between PC and AD unit	≤ 10
Allowable elevation difference	H1	When outdoor unit is installed higher than indoor unit	≤ 50
		When outdoor unit is installed lower than indoor unit	≤ 40
	H2	Max. difference between indoor units	≤ 15
	H3	Max. difference between outdoor units	≤ 4

Note 1: The outdoor connection main piping (LO part) depends on the total capacity of the outdoor units connected to the end.

Note 2: When the main piping length (L1) (equivalent length) exceeds 90 m, increase the size of both the gas and liquid main piping (LM) by 1 step.

Distribution joint kits

Remarks	Model name	Cooling capacity after distribution
For outdoor unit	1. APR-CHP680BG	68.0 kW or less
	2. APR-CHP1350BG	135.0 kW or less
For indoor unit	3. APR-P160BG	22.4 kW or less
	4. APR-P680BG	68.0 kW or less
	5. APR-P1350BG	135.0 kW or less

System limitations

Max. number of combined outdoor units	3
Max. HP of combined outdoor units	135 kW (48 hp)
Max. number of connectable indoor units	40
Indoor/outdoor unit capacity ratio	50 - 130%

Additional refrigerant charge

Liquid piping size	Amount of refrigerant charge/m (g/m)
ø 6.35	26
ø 9.52	56
ø 12.7	128
ø 15.88	185
ø 19.05	259
ø 22.22	366

Refrigerant piping

Piping size (mm)			
O material		1/2 H, H material	
Outer diameter	Wall thickness	Outer diameter	Wall thickness
ø 6.35	t 0.8	ø 25.4	t 1.0
ø 9.52	t 0.8	ø 28.58	t 1.0
ø 12.7	t 0.8	ø 31.75	t 1.1
ø 15.88	t 1.0	ø 38.1	t 1.15
ø 19.05	t 1.0	ø 41.28	t 1.20
ø 22.22	t 1.15		

Note: When pipe bending is to be performed, the bending radius shall be at least 4 times the outer diameter. Also, take sufficient care to prevent pipe collapse and damage at the time of bending.



■ 2 WAY ECO-i 5N series piping sizes

● Main pipe sizes (LA)

HP	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
Combined outdoor units	8	10	12	14	16	10 8	12 8	14 8	16 8	14 12	16 12	16 14	16 16	16 10 8	16 12 8	16 14 8	16 16 8	16 14 12	16 16 12	16 16 14	16 16 16
Gas pipe (mm)	ø19.05	ø22.22	ø25.4		ø28.58					ø31.75					ø38.1						
Liquid pipe (mm)	ø9.52		ø12.7			ø15.88				ø19.05					ø19.05						

Note 1: When future expansion is planned, select the piping diameter according to the total HP after expansion.

Note 2: The balance piping size is ø6.35.

Note 3: Max. length for the main pipe (LM); when the length exceeds 50 m, the size of the Gas pipe shall be increased by one size from the main pipe size up to 50 m. (For lengths in excess of 50 m, select from the above main pipes size table.)

● Main piping size between outdoor units (LO)

Select the piping size between outdoor units according to the main pipe size (LA) of the above table.

● Main piping size after distribution (LB, LC, ...)

Total capacity after distribution	Below kW	7.1	16.0	22.5	30.0	42.0	52.4	70.0	98.0	—
	Over kW	—	7.1	16.0	22.5	30.0	42.0	52.4	70.0	98.0
Piping size	Gas pipe (mm)	ø 12.7	ø 15.88	ø 19.05	ø 22.22	ø 25.4	ø 28.58		ø 31.75	ø 38.1
	Liquid pipe (mm)	ø 9.52				ø 12.7		ø 15.88	ø 19.05	

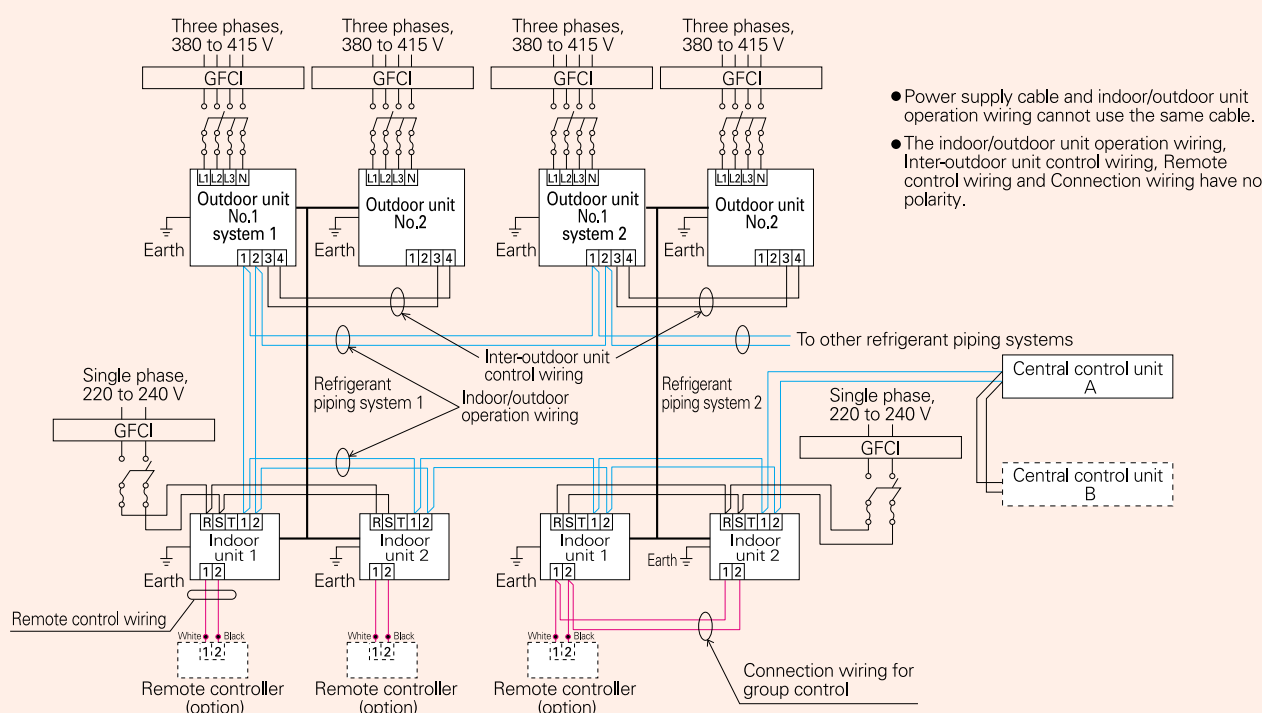
Note 1: The outdoor unit connection main pipe (LO part) depends on the total capacity of the outdoor units connected to the end. Select the piping size from the table for the main pipe size after distribution.

Note 2: When the total capacity of the indoor units connected to the end differs from the total capacity of the outdoor units, select the main pipe size according to the total capacity of the outdoor units. (Especially the main pipe part of LA, LB, LF, etc.)

● Indoor unit connection piping (1 to 40)

Indoor unit type	7 type	9 type	12 type	16 type	18 type	25 type	36 type	48 type	60 type	76 type	96 type
Equivalent HP	0.8	1	1.3	1.6	2	2.5	4	5	6	8	10
Piping between solenoid valve kit and indoor connection piping	Gas pipe (mm)	ø 12.7					ø 15.88			ø 19.05	ø 22.22
	Liquid pipe (mm)	ø 6.35					ø 9.52				

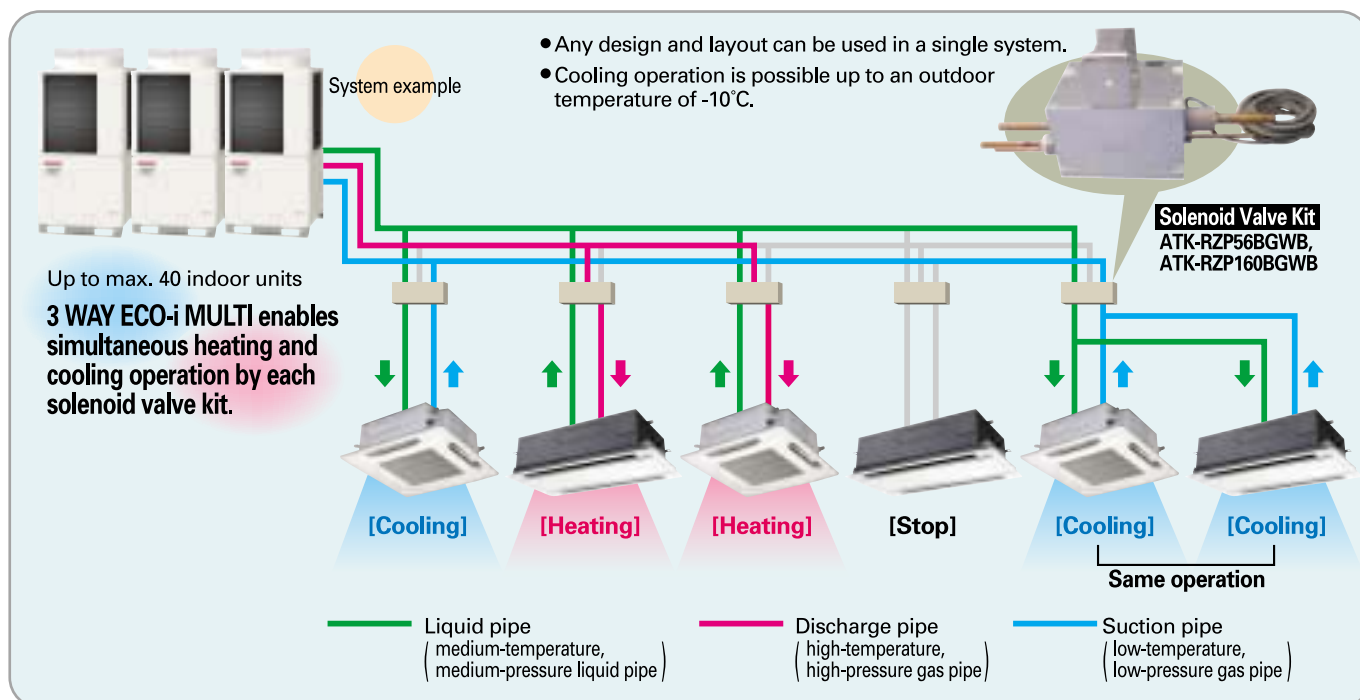
■ Recommended wiring diagram



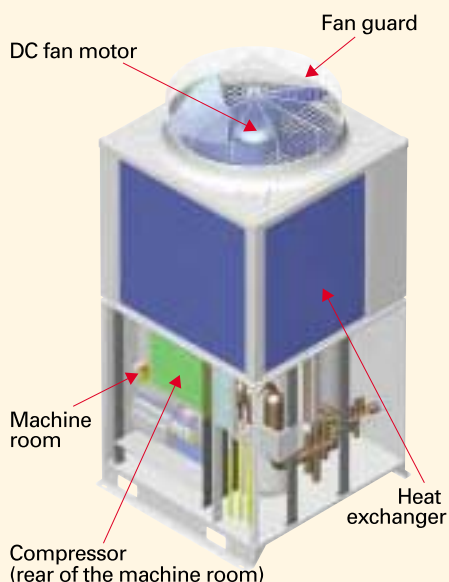
3 WAY ECO-i MULTI SYSTEM

New 3 WAY ECO-i MULTI simultaneous heating

Fully-automatic simultaneous Cooling/Heating operation and heat recovery



The advanced technology of 3 WAY ECO-i MULTI



The outdoor units have been unified to a body of the same size.

Unification to one size and combination of five types. This permits a neat fit even when several units are installed, and space savings in the top class of the industry have been realized.

Improved operation efficiency

In addition to the development of a new DC fan motor with high output and high efficiency, the output loss has been reduced by reducing the resistance of the fan guard. This contributes widely to COP increase.

The constant-speed compressor adopts a high-performance internal high-pressure scroll

In comparison with the conventional low-pressure scroll, the oil behavior is stabilized, COP is improved, and the reliability is also improved.

Improvement of the heat exchanger

Hairpins with a diameter of 7 mm are used for the heat exchanger, and the radiation area has been increased. In addition, the air speed distribution has been improved by 4-direction suction, and the COP has also been improved.

Review of the layout of the structural parts

Noise reduction has been realized by arranging the compressor in a special machine room at the bottom.

Close side-by-side installation is possible

The mounting fittings for the outdoor unit have been changed to the front and the rear, so that the units can be installed side by side with just 100 mm between units and reduction of the installation space has been realized.

with use of R410A enables
and cooling operation



3 WAY ECO-i MULTI operation patterns (10 HP system)

Example: in case of 3 WAY ECO-i MULTI: 10 HP outdoor unit x 1 – 2 HP indoor unit x 5,
Single system: 2 HP outdoor unit x 5 – 2 HP indoor unit x 5.

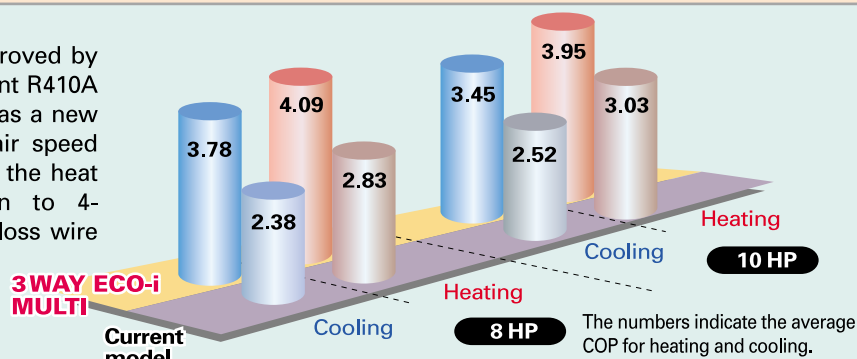
Pattern example	3 WAY ECO-i MULTI system outline (examples)	Comparison between 3 WAY ECO-i system and single system	Outdoor unit (load: HP)
Cooling load (HP) : Heating load (HP) Indoor unit total load (HP)			System comparison Compressor power load Heat exchanger radiation/ endothermic load HP comparison with a single system
Only cooling Cooling load 10 HP Indoor unit total load 10 HP			3WAY ECO-i MULTI 10 10 Single system 10 10 100 %
Cooling > Heating Cooling load 4 HP > Heating load 2 HP Indoor unit total load 6 HP			3WAY ECO-i MULTI 4 2 Single system 6 6 67 %
Cooling < Heating Cooling load 2 HP < Heating load 8 HP Indoor unit total load 10 HP			3WAY ECO-i MULTI 8 6 Single system 10 10 80 %
Cooling = Heating Cooling load 4 HP = Heating load 4 HP Indoor unit total load 8 HP			3WAY ECO-i MULTI 4 0 Single system 8 8 50 %

** Compressor AC: Constant-speed compressor, DC: DC inverter compressor

3 WAY ECO-i MULTI SYSTEM

More excellent energy saving

The operation efficiency has been improved by using the highly efficient new refrigerant R410A and a DC inverter compressor as well as a new DC fan motor, improvement of the air speed distribution by changing the design of the heat exchanger from 3-direction suction to 4-direction suction, and by using a low-loss wire guard for the fan guard.



Line-up expansion

The 3 WAY ECO-i series has five DC inverter outdoor units from 8 HP to 16 HP as the basic models, and by combination of up to three units, an air-conditioning capacity of 8 HP to 48 HP can be set according to the user needs.

HP	8	10	12	14	16	18	20	22	24	26	28
3 WAY ECO-i MULTI	○	○	○	○	○	○	○	○	○	○	○
Inverter unit	8	10	12	14	16	10	10	12	14	16	16
						8	10	10	10	10	12

HP	30	32	34	36	38	40	42	44	46	48
3 WAY ECO-i MULTI	○	○	○	○	○	○	○	○	○	○
Inverter unit	16	16	10	10	10	10	10	12	14	16
	14	16	10	10	12	14	16	16	16	16
			14	16	16	16	16	16	16	16

Current model

2 model



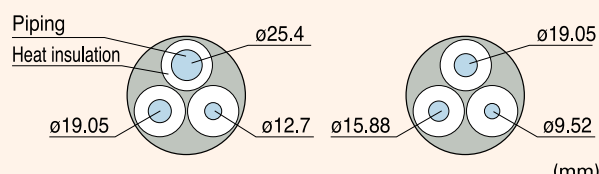
3 WAY ECO-i MULTI

21 model

Reduction of the piping cost and construction labor by smaller piping size

By adoption of R410A with low pressure loss, it was possible to reduce the pipe sizes for discharge, suction and liquid pipes.

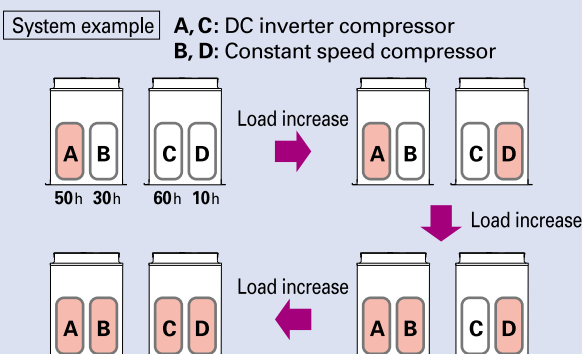
This makes it possible to aim for reduced piping space, improved workability at the site, and reduction of the piping material costs.



HP	Current model			3 WAY ECO-i MULTI		
	Suction pipe	Discharge pipe	Liquid pipe	Suction pipe	Discharge pipe	Liquid pipe
8	ø25.4	ø19.05	ø12.7	ø19.05	ø15.88	ø9.52
10	ø28.58	ø19.05	ø12.7	ø22.22	ø19.05	ø9.52

Extended compressor life by uniform compressor operation times

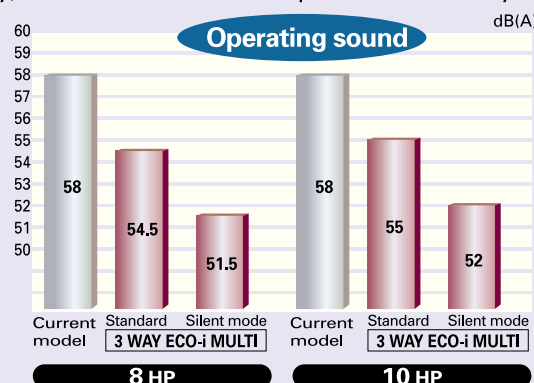
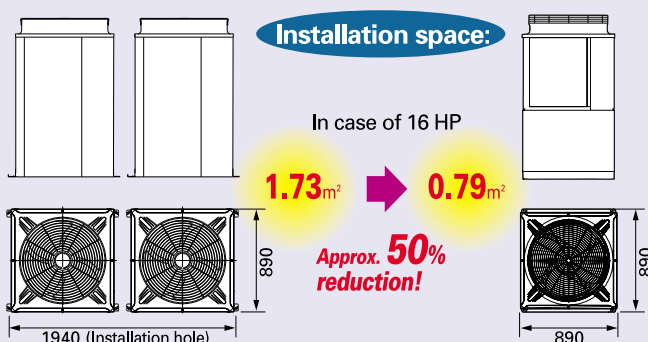
The total operation time of the compressors is monitored by a microcomputer, so that there is no unbalance for the operation times of all compressors in the same refrigerant system, and compressors with a shorter operation time are operated with preference.





Smallest installation space in the industry! Further reduction of the operating sound

The five DC inverter types from 8 HP to 16 HP have been unified to the same external dimensions by using a two-room construction with the compressor and other structural parts at the lower room of the outdoor unit and the heat exchanger at the upper room of the outdoor unit. In this way, the smallest installation space in the industry and low operating sound have been realized.



Extended operating range

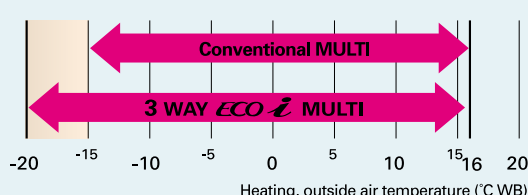
Cooling operation range:

- The cooling operation range has been extended from -5°C to -10°C by changing the outdoor fan to an inverter type.



Heating operation range:

- Stable heating operation even with an outside air temperature of -20°C
- The heating operation range has been extended from -15°C to -20°C by use of a compressor with a high-pressure vessel.



Wide temperature setting range

[Wired remote control heating temperature setting range]

Conventional MULTI: 16 to 26°C

ECO-i Series: 16 to 30°C

Built-in "Demand function" ^{*1} for reduced power consumption

The 3 WAY ECO-i MULTI series has a built-in demand function which uses the inverter characteristics. With this demand function, the power consumption can be set in three steps ^{*2}, and operation at optimum performance is performed according to the setting and the power consumption. This function is useful to reduce the annual power consumption and to save electricity fees while maintaining comfort.

(^{*1}) An outdoor Seri-Para I/O unit is required for demand input.

(^{*2}) Setting is possible as 0% or in the range from 40 to 100% (in steps of 5%). At the time of shipping, setting has been done to the three steps of 0%, 70%, and 100%.

An emergency backup function is provided

Long piping design

Actual piping length 100m → 150m

Total piping length 150m → 300m


Increased max. number of connectable indoor units

System (HP)	8	10	12	14	16	18	20	22	24~48
Connectable indoor units	13	16	19	23	26	29	33	36	40

3WAY ECO i MULTI SYSTEM



Outdoor unit specifications

Appearance							
HP			8	10	12	14	16
Model name (SPW-)			CR704GDZH8B	CR904GDZH8B	CR1154GDZH8B	CR1304GDZH8B	CR1404GDZH8B
Power supply			380/400/415V-3 phase/50Hz				
Capacity	Cooling	(kW)	22.4	28.0	33.5	40.0	45.0
		(BTU/h)	76,400	95,500	114,300	136,500	153,600
	Heating	(kW)	25.0	31.5	37.5	45.0	50.0
		(BTU/h)	85,300	107,500	128,000	153,600	170,600
COP	Cooling	(W/W)	3.78	3.45	3.41	3.45	3.38
	Heating	(W/W)	4.09	3.95	3.81	3.91	3.79
Dimensions(H×W×D) (mm)			1,887 × 890 × 890 (+60)				
Net weight (kg)			290	290	290	350	350
Electrical rating	Cooling	Running amperes (A)	10.0/9.5/9.2	13.7/13.0/12.6	16.6/15.7/15.2	20.0/19.0/18.3	23.0/21.8/21.0
		Power input (kW)	5.93	8.12	9.82	11.6	13.3
	Heating	Running amperes (A)	10.3/9.8/9.4	13.5/12.8/12.3	16.6/15.8/15.2	19.9/18.9/18.2	22.8/21.6/20.9
		Power input (kW)	6.11	7.97	9.84	11.5	13.2
	Starting amperes (A)		59/62/64	66/69/72	69/72/75	68/71/73	78/80/82
Air circulation (m³/min)			150	160	180	200	220
Refrigerant amount at shipment (kg)			11.8				
Piping connection	Suction pipe (mm)	ø19.05	ø22.22	ø25.4	ø25.4	ø28.58	
	Discharge pipe (mm)	ø15.88	ø19.05	ø19.05	ø22.22	ø22.22	
	Liquid pipe (mm)	ø9.52	ø9.52	ø12.7	ø12.7	ø12.7	
	Balance pipe (mm)	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	
Ambient temperature operating range			Cooling/dry: -10℃~+ 43℃ (DB), Heating: -20℃ ~+15℃ (WB) Simultaneous operation: -10℃~+ 43℃ (DB)				
Pressure sound	Normal mode dB(A)	54.5	55	56	60	61	
	Silent mode dB(A)	51.5	52	53	57	58	
Power sound	Normal mode dB(A)	65.5	66	67	71	72	

* The values for performance and electric characteristics apply under the following test conditions.

Data subject to change without notice.

At the time of cooling: Indoor suction air temperature 27°C DB, 19°C WB, outdoor suction air temperature 35°C DB

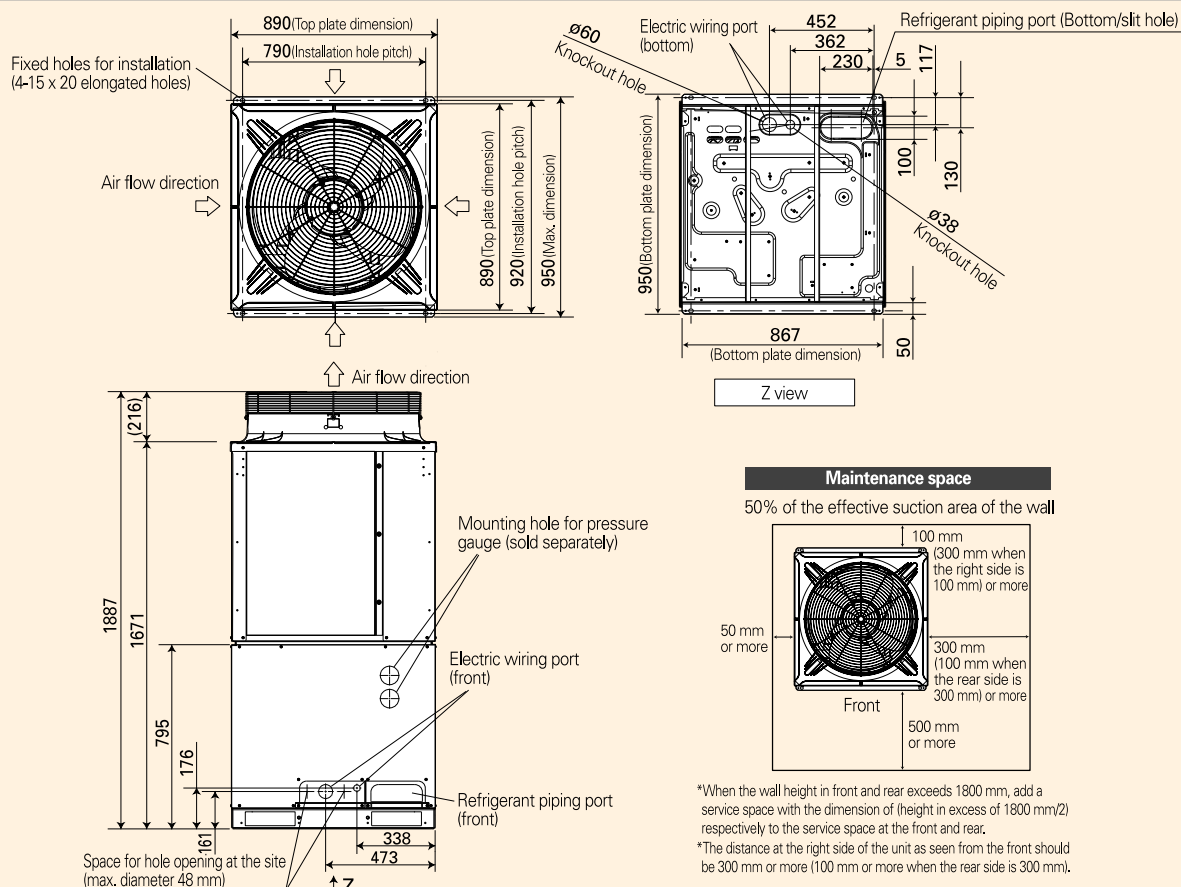
At the time of heating: Indoor suction air temperature 20°C DB, outdoor suction air temperature 7°C DB, 6°C WB

* The operating sound has been measured in an anechoic chamber, and it is the value one meter in front of the outdoor unit at a height of 1.5 m. With actual installation, the indication value normally differs widely according to the surrounding noise and reverberations.

* For mixed heating and cooling operation with an outdoor temperature in excess of 24°C DB, please use 50% or more of the horsepower of the outdoor unit for cooling operation.



External dimension drawings



Optional parts

Distribution joint kit

< For indoor units >

- APR-RZP224BGB (Capacity after distribution: 22.4 kW or lower)
- APR-RZP680BGB (Capacity after distribution: Over 22.4 kW to 68.0 kW)
- APR-RZP1350BGB (Capacity after distribution: Over 68.0 kW to 135.0 kW)

< For outdoor units >

- APR-CHRZP680BGB (Capacity after distribution: 68.0 kW or lower)
- APR-CHRZP1350BGB (Capacity after distribution: Over 68.0 kW to 135.0 kW)

The following parts must be installed for each ECO-i 3 WAY MULTI indoor unit.

Solenoid valve kit

●ATK-RZP56BGWB

(For 7 to 18 indoor unit)

●ATK-RZP160BGWB

(For 25 to 60 indoor unit)



* When 8 or 10 HP indoor units are used, connect two solenoid valve kits in parallel.

● 8 HP and 10 HP indoor unit: ATK-RZP160BGWB x 2

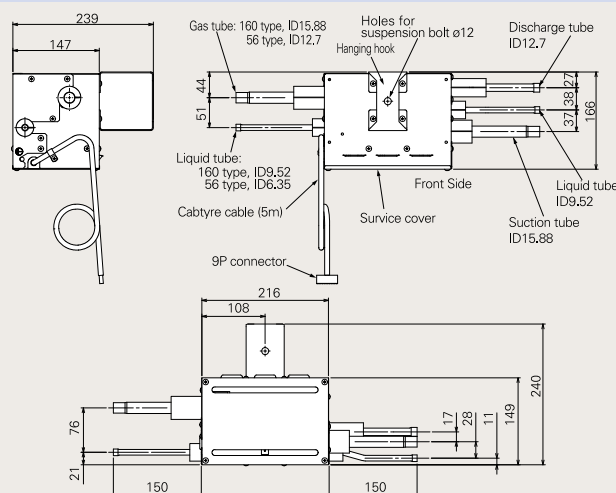
* For conference rooms and other locations where low noise is required, pay attention to the installation location and install on a corridor etc.

Solenoid valve controller

●ACC-3WAY-AGB



This controls the rap valve kit and the solenoid valve kit.





● A solenoid valve controller (ACC-3 WAY-AGB) is required for connection of the cable of the solenoid valve kit.

● In order to prevent the refrigerant noise occurring at the time of refrigerant control, install within the specified distance range and on a corridor or another location not in the room.

3WAY ECO i MULTI SYSTEM

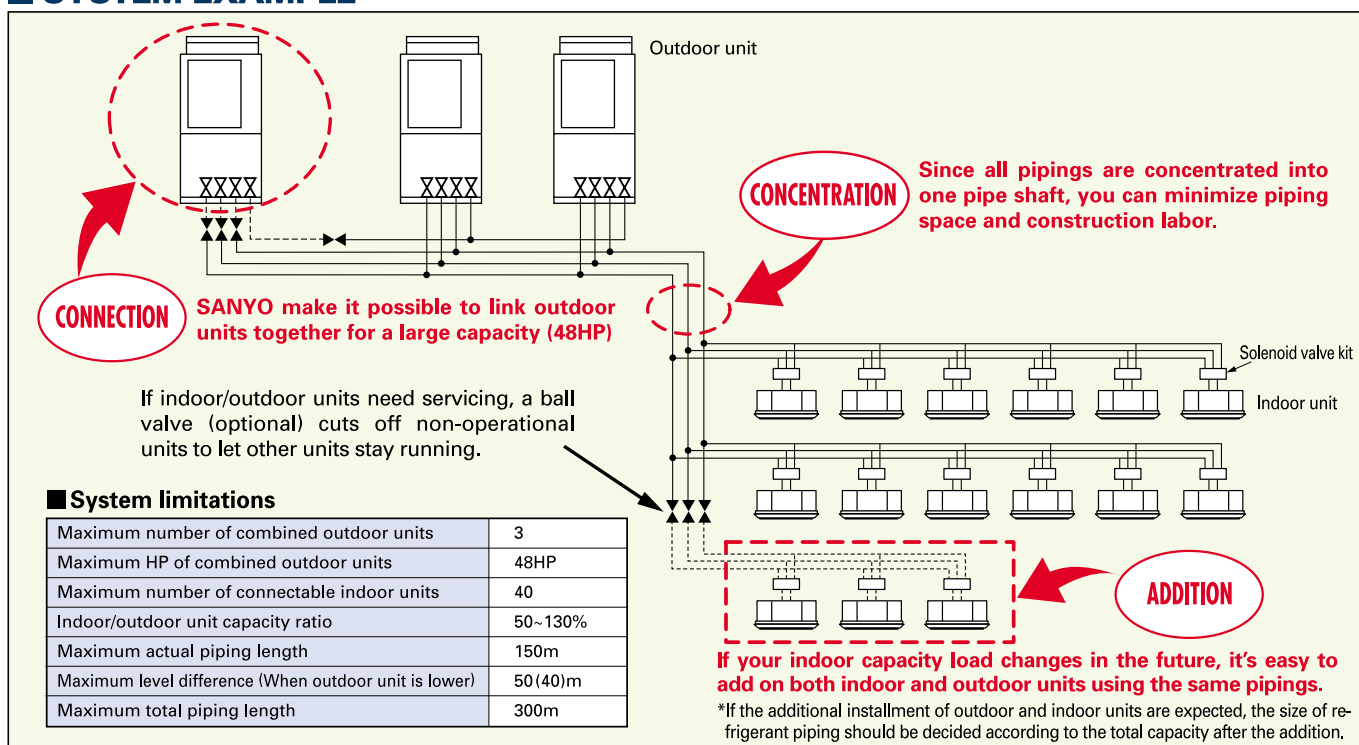
OUTDOOR UNITS SPECIFICATIONS

Appearance												
HP			8	10	12	14	16	18	20	22	24	
Model name (SPW-)			CR704GDZH8B	CR904GDZH8B	CR1154GDZH8B	CR1304GDZH8B	CR1404GDZH8B	CR704GDZH8B CR904GDZH8B	CR904GDZH8B CR904GDZH8B	CR904GDZH8B CR1154GDZH8B	CR904GDZH8B CR1304GDZH8B	
Power supply			380/400/415V-3phase/50Hz									
Capacity	Cooling	(kW)	22.4	28.0	33.5	40.0	45.0	50.4	56.0	61.5	68.0	
		(BTU/h)	76,400	95,500	114,300	136,500	153,600	172,000	191,100	219,900	232,000	
	Heating	(kW)	25.0	31.5	37.5	45.0	50.0	56.5	63.0	69.0	76.5	
		(BTU/h)	85,300	107,500	128,000	153,600	170,600	192,800	215,000	235,500	261,100	
COP	Cooling	(W/W)	3.78	3.45	3.41	3.45	3.38	3.57	3.46	3.44	3.45	
	Heating	(W/W)	4.09	3.95	3.81	3.91	3.79	4.01	3.96	3.88	3.92	
Dimensions (HxWxD)		(mm)	1,887 x 890 x 890 (+60)					1,887 x 1,880 x 890 (+60)				
Net weight		(kg)	290					580				
Electrical ratings	Cooling	Running amperes (A)	10.0/9.5/9.2	13.7/13.0/12.6	16.6/15.7/15.2	20.0/19.0/18.3	23.0/21.8/21.0	23.8/22.6/21.8	27.3/26.0/25.0	30.2/28.7/27.7	33.6/31.9/30.8	
		Power input (kW)	5.93	8.12	9.82	11.6	13.3	14.1	16.2	17.9	19.7	
	Heating	Running amperes (A)	10.3/9.8/9.4	13.5/12.8/12.3	16.6/15.8/15.2	19.9/18.9/18.2	22.8/21.6/20.9	23.8/22.6/21.8	26.8/25.5/24.6	30.0/28.5/27.5	33.3/31.6/30.5	
		Power input (kW)	6.11	7.97	9.84	11.5	13.2	14.1	15.9	17.8	19.5	
Air circulation		(m³/min)	150	160	180	200	220	150+160	160+160	160+180	160+200	
Refrigerant amount at shipment		(kg)	11.8					23.6				
Piping connections	Suction pipe	(mm)	ø19.05	ø22.22	ø25.4	ø25.4	ø28.58	ø28.58	ø28.58	ø28.58	ø28.58	
	Discharge pipe	(mm)	ø15.88	ø19.05	ø19.05	ø22.22	ø22.22	ø22.22	ø22.22	ø25.4	ø25.4	
	Liquid pipe	(mm)	ø9.52	ø9.52	ø12.7	ø12.7	ø12.7	ø15.88	ø15.88	ø15.88	ø15.88	
	Balance pipe	(mm)	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	
Ambient temperature operating range		Cooling/Dry: -10°C~-+43°C (DB), Heating: -20°C~-+15°C (WB) Simultaneous operation: -10°C~-+43°C (DB)										
Operating sound	Normal mode	dB(A)	54.5	55	56	60	61	58	58	58.5	61.5	
	Silent mode	dB(A)	51.5	52	53	57	58	55	55	55.5	58.5	



Note: Rated conditions Cooling: indoor air temperature 27°C CB/19°C WB, outdoor air temperature 35°C DB
Heating: indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* For mixed heating and cooling operation with an outdoor temperature in excess of 24°C DB, please use 50% or more of the horsepower of the outdoor unit for cooling operation.

SYSTEM EXAMPLE

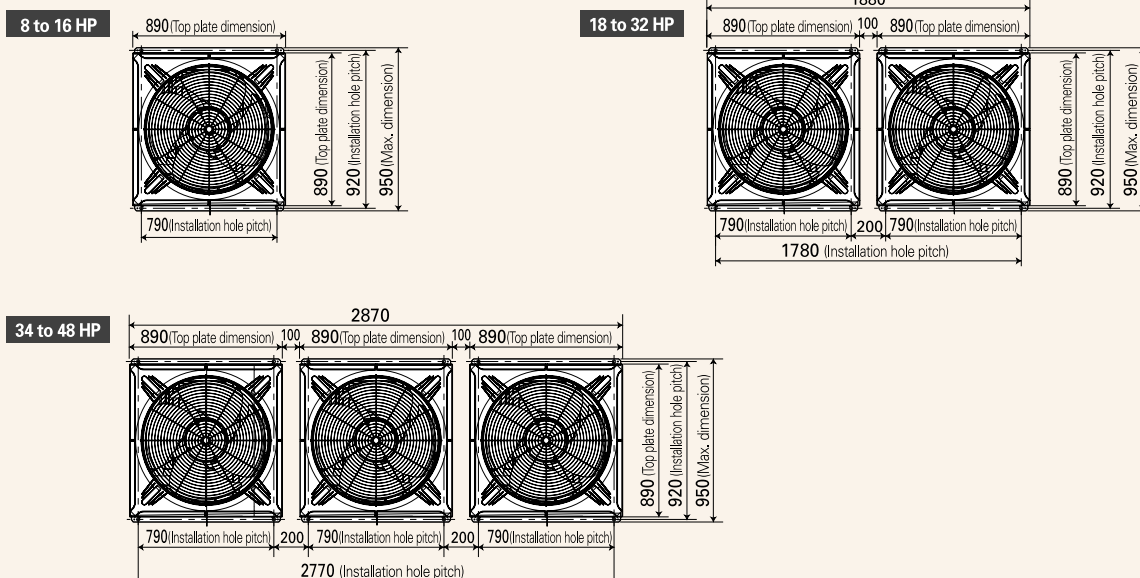




												
	26	28	30	32	34	36	38	40	42	44	46	48
	CR904GDZH8B CR1404GDZH8B	CR1154GDZH8B CR1404GDZH8B	CR1304GDZH8B CR1404GDZH8B	CR1404GDZH8B CR1404GDZH8B	CR904GDZH8B CR904GDZH8B CR1304GDZH8B	CR904GDZH8B CR904GDZH8B CR1404GDZH8B	CR904GDZH8B CR1154GDZH8B CR1404GDZH8B	CR904GDZH8B CR1304GDZH8B CR1404GDZH8B	CR904GDZH8B CR1404GDZH8B CR1404GDZH8B	CR1154GDZH8B CR1404GDZH8B CR1404GDZH8B	CR1304GDZH8B CR1404GDZH8B CR1404GDZH8B	CR1404GDZH8B CR1404GDZH8B CR1404GDZH8B
380/400/415V-3phase/50Hz												
	73.0	78.5	85.0	90.0	96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
	249,100	267,900	290,100	307,100	327,600	344,700	363,400	385,600	402,700	421,400	443,600	460,700
	81.5	87.5	95.0	100.0	108.0	113.0	119.0	127.0	132.0	138.0	145.0	150.0
	278,100	300,300	324,200	343,000	368,500	385,600	407,800	431,700	450,400	470,900	494,800	511,900
	3.41	3.40	3.41	3.38	3.45	3.41	3.42	3.42	3.40	3.41	3.40	3.38
	3.84	3.80	3.85	3.79	3.93	3.88	3.84	3.88	3.84	3.81	3.83	3.79
	1,887 x 1,880 x 890 (+60)				1,887 x 2,870 x 890 (+60)							
	640	640	700	700	930	930	930	990	990	990	1,050	1,050
	36.5/34.7/33.5	39.4/37.5/36.1	43.0/40.8/39.4	45.9/43.6/42.1	47.5/45.1/43.5	50.5/48.0/46.3	53.0/51.0/49.0	57.0/54.0/52.0	60.0/57.0/55.0	63.0/60.0/58.0	66.0/63.0/60.0	69.0/65.0/63.0
	21.4	23.1	24.9	26.6	27.8	29.6	31.3	33.0	34.7	36.4	38.2	39.9
	36.2/34.4/33.1	39.3/37.3/36.0	42.6/40.5/39.0	45.6/43.3/41.7	46.9/44.6/43.0	49.7/47.2/45.5	53.0/50.0/48.0	56.0/54.0/52.0	59.0/56.0/54.0	63.0/59.0/57.0	65.0/62.0/60.0	68.0/65.0/63.0
	21.2	23.0	24.7	26.4	27.5	29.1	31.0	32.7	34.4	36.2	37.9	39.6
	160+220	180+220	200+220	220+220	160+160+200	160+160+220	160+180+220	160+200+220	160+220+220	180+220+220	200+220+220	220+220+220
	23.6				35.4							
	ø31.75	ø31.75	ø31.75	ø31.75	ø31.75	ø38.1	ø38.1	ø38.1	ø38.1	ø38.1	ø38.1	ø38.1
	ø25.4	ø28.58	ø28.58	ø28.58	ø28.58	ø28.58	ø31.75	ø31.75	ø31.75	ø31.75	ø31.75	ø31.75
	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05	ø19.05
	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52	ø9.52
Cooling/Dry: -10°C~+43°C (DB), Heating: -20°C~+15°C (WB) Simultaneous operation: -10°C~+24°C (DB)												
	62	62.5	63.5	64	62.5	63	63	64.5	64.5	65	65.5	66
	59	59.5	60.5	61	59.5	60	60	61.5	61.5	62	62.5	63

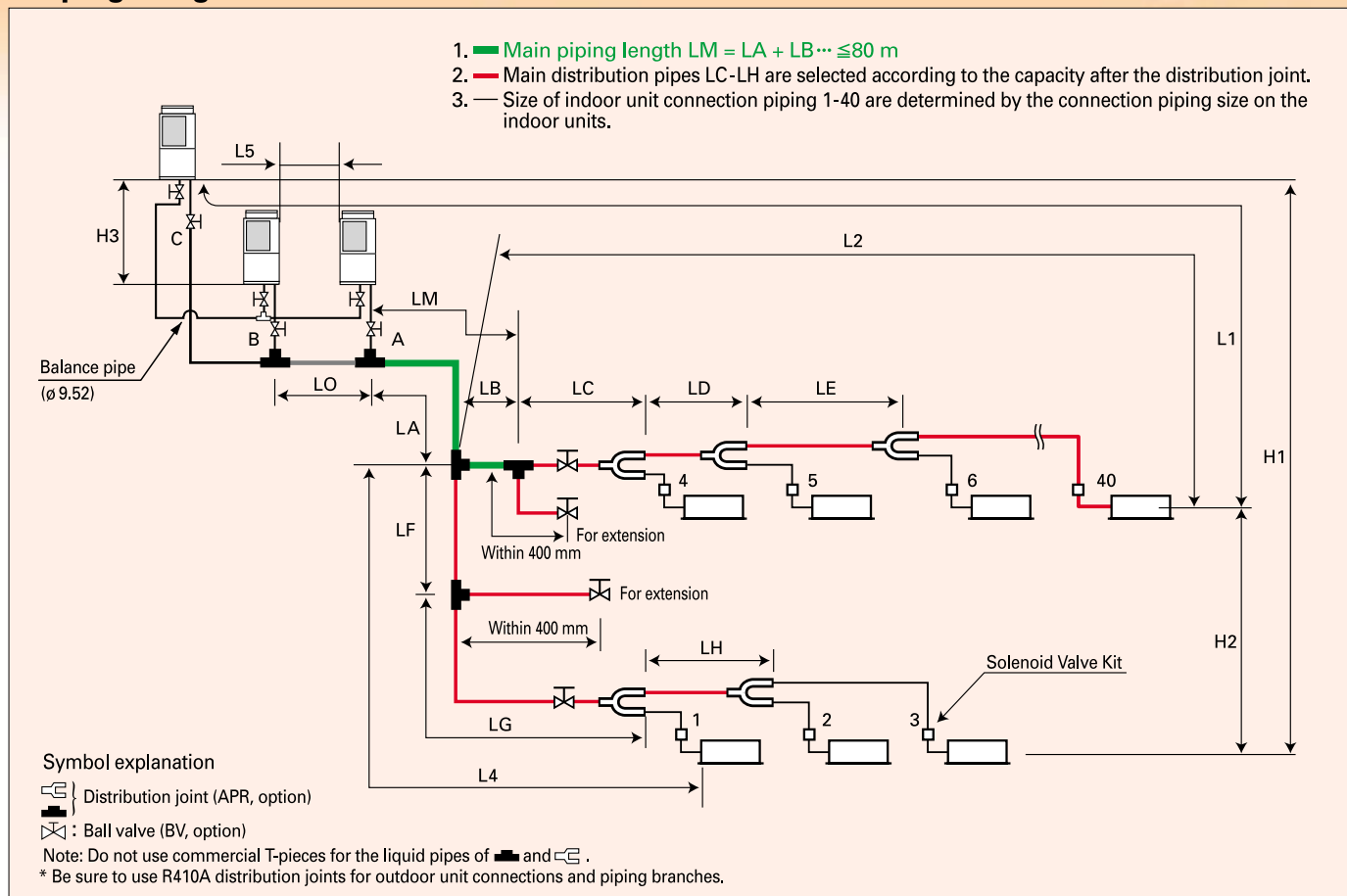
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DIMENSION OF UNIT COMBINATIONS



3WAY ECO i MULTI SYSTEM

Piping design



Ranges that apply to refrigerant piping lengths and to differences in installation heights

Items	Marks	Contents	Length (m)
Allowable piping length	L1	Max. piping length	Actual piping length ≤150 Equivalent piping length ≤175
	ΔL (L2 - L4)	Difference between the max. length and the min. length from the No.1 distribution joint	≤40
	LM	Max. length of main piping (at max. diameter)	≤80
	1, 2~40	Max. length of each distribution	≤30
	L1+L2+L3+L4+L5+L6+L7+L8+L9+L10+L11+L12+L13+L14+L15+L16+L17+L18+L19+L20+L21+L22+L23+L24+L25+L26+L27+L28+L29+L30+L31+L32+L33+L34+L35+L36+L37+L38+L39+L40	Total max. piping length including length of each distribution (only narrow tubing)	≤300
	L5	Distance between PC and AD unit	≤10
Allowable elevation difference	H1	When outdoor unit is installed higher than indoor unit	≤50
	H2	When outdoor unit is installed lower than indoor unit	≤40
	H3	Max. difference between indoor units	≤15
		Max. difference between outdoor units	≤4

Note 1: The outdoor connection main piping (L0 part) depends on the total capacity of the outdoor units connected to the end.

Note 2: When the main piping length (L1) (equivalent length) exceeds 90 m, increase the size of both the gas and liquid main piping (LM) by 1 step.

Distribution joint kits

Remarks	Model name	Cooling capacity after distribution
For outdoor unit	1. APR-CHRP680BGB	68.0 kW or less
	2. APR-CHRP1350BGB	135.0 kW or less
For indoor unit	3. APR-RZP224BGB	22.4 kW or less
	4. APR-RZP680BGB	68.0 kW or less
	5. APR-RZP1350BGB	135.0 kW or less

System limitations

Max. number of combined outdoor units	3
Max. HP of combined outdoor units	135 kW (48 hp)
Max. number of connectable indoor units	40
Indoor/outdoor unit capacity ratio	50 - 130%

Additional refrigerant charge

Liquid piping size	Amount of refrigerant charge/m (g/m)
ø6.35	26
ø9.52	56
ø12.7	128
ø15.88	185
ø19.05	259
ø22.22	366

Refrigerant piping

Piping size (mm)			
O material		1/2 H, H material	
Outer diameter	Wall thickness	Outer diameter	Wall thickness
ø 6.35	t 0.8	ø 25.4	t 1.0
ø 9.52	t 0.8	ø 28.58	t 1.0
ø 12.7	t 0.8	ø 31.75	t 1.1
ø 15.88	t 1.0	ø 38.1	t 1.15
ø 19.05	t 1.0	ø 41.28	t 1.20
ø 22.22	t 1.15		

Note: When pipe bending is to be performed, the bending radius shall be at least 4 times the outer diameter. Also, take sufficient care to prevent pipe collapse and damage at the time of bending.



■ 3 WAY ECO-i MULTI piping sizes

● Main pipe sizes (LA)

HP	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
Combined outdoor units	8	10	12	14	16	10 8	10 10	12 10	14 10	16 10	16 12	16 14	16 16	14 10	16 10	16 12	16 10	16 10	16 12	16 14	16 16
Suction pipe (mm)	ø19.05	ø22.22	ø25.4	ø28.58				ø31.75				ø38.1				ø42.0				ø46.0	
Discharge pipe (mm)	ø15.88	ø19.05	ø22.22				ø25.4				ø28.58				ø31.75				ø35.0		ø38.1
Liquid pipe (mm)	ø9.52	ø12.7				ø15.88				ø19.05				ø22.22				ø25.4		ø28.58	

Note 1: When future expansion is planned, select the piping diameter according to the total HP after expansion.

Note 2: The balance piping size is ø9.52.

Note 3: Max. length for the main pipe (LM); when the length exceeds 50 m, the size of the suction pipe and the discharge pipe shall be increased by one size from the main pipe size up to 50 m. (For lengths in excess of 50 m, select from the above main pipes size table.)

● Main piping size between outdoor units (LO)

Select the piping size between outdoor units according to the main pipe size (LA) of the above table.

● Main tubing size after distribution (LB, LC, ...)

Total capacity after distribution	Below kW	7.1	16.0	26.2	30.0	36.4	42.0	47.6	58.8	70.0	75.6	98.0	103.6	—
	Over kW	—	7.1	16.0	26.2	30.0	36.4	42.0	47.6	58.8	70.0	75.6	98.0	103.6
Piping size	Suction pipe (mm)	ø 15.88	ø 19.05	ø 19.05	ø 22.22	ø 25.4	ø 25.4	ø 28.58	ø 28.58	ø 28.58	ø 31.75	ø 31.75	ø 38.1	ø 38.1
	Discharge pipe (mm)	ø 12.7	ø 15.88	ø 15.88	ø 19.05	ø 19.05	ø 22.22	ø 22.22	ø 22.22	ø 25.4	ø 25.4	ø 28.58	ø 28.58	ø 31.75
	Liquid pipe (mm)	ø 9.52	ø 9.52	ø 9.52	ø 9.52	ø 12.7	ø 12.7	ø 12.7	ø 15.88	ø 15.88	ø 19.05	ø 19.05	ø 19.05	ø 19.05

Note 1: The outdoor unit connection main pipe (LO part) depends on the total capacity of the outdoor units connected to the end. Select the piping size from the table for the main pipe size after distribution.

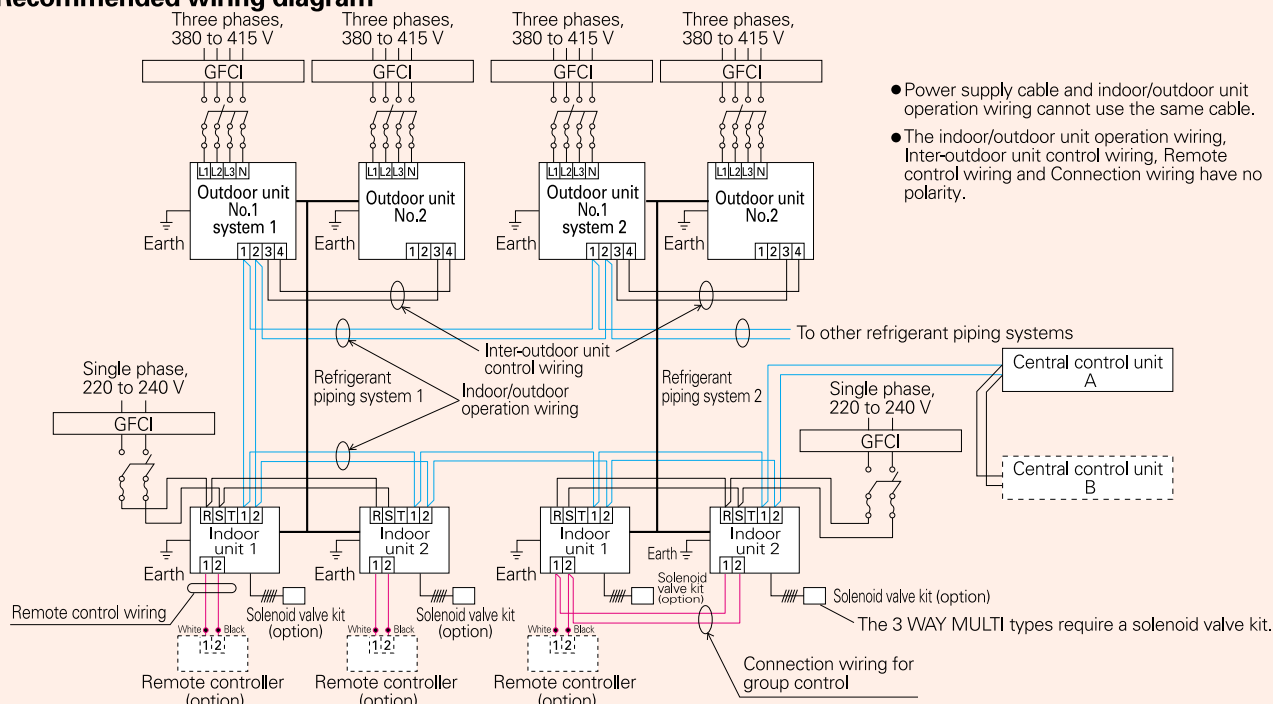
Note 2: When the total capacity of the indoor units connected to the end differs from the total capacity of the outdoor units, select the main pipe size according to the total capacity of the outdoor units. (Especially the main pipe part of LA, LB, LF, etc.)

● Indoor unit connection piping (1 to 40)

Indoor unit type	7 type	9 type	12 type	16 type	18 type	25 type	36 type	48 type	60 type	76 type*1	96 type*1
Equivalent HP	0.8	1	1.3	1.6	2	2.5	4	5	6	8	10
Piping between distribution and solenoid valve kit	Suction pipe (mm)	ø 15.88								ø 19.05	ø 22.22
	Discharge pipe (mm)	ø 12.7								ø 15.88	ø 19.05
	Liquid pipe (mm)	ø 9.52								ø 15.88	ø 19.05
Piping between solenoid valve kit and indoor connection piping	Gas pipe (mm)	ø 12.7				ø 15.88				ø 19.05	ø 22.22
	Liquid pipe (mm)	ø 6.35				ø 9.52				ø 15.88	ø 19.05

**1 When an indoor unit of type 76 or 96 is used, use the type 160 solenoid valve kit in parallel specification and branch the piping before/after the solenoid valve kit.

■ Recommended wiring diagram



INDOOR UNITS FOR DIRECT EXPANSION SYSTEM

Wide choice of models depending on the indoor requirements

Model size			7	9	12	16	18	22
Capacity	kW	Cooling Heating	2.2 2.5	2.8 3.2	3.6 4.2	4.5 5.0	5.6 6.3	6.4 7.0
	BTU/h	Cooling Heating	7,500 8,500	9,600 11,000	12,000 14,000	15,000 17,000	19,000 21,000	22,000 24,000
XM type (600 x 600) Semi-Concealed Cassette 4-Way Air Discharge			SPW-XM075XH Panel PNR-XM185	SPW-XM095XH Panel PNR-XM185	SPW-XM125XH Panel PNR-XM185	SPW-XM165XH Panel PNR-XM185	SPW-XM185XH Panel PNR-XM185	
X type Semi-Concealed Cassette 4-Way Air Discharge			SPW-X075XH Panel PNR-XD484GHAB	SPW-X095XH Panel PNR-XD484GHAB	SPW-X125XH Panel PNR-XD484GHAB	SPW-X165XH Panel PNR-XD484GHAB	SPW-X185XH Panel PNR-XD484GHAB	
XMR type (600 x 600) Semi-Concealed Cassette 4-Way Air Discharge			SPW-XMR74EXH56B Panel PNR-XM184EHA	SPW-XMR94EXH56B Panel PNR-XM184EHA	SPW-XMR124EXH56B Panel PNR-XM184EHA	SPW-XMR164EXH56B Panel PNR-XM184EHA	SPW-XMR184EXH56B Panel PNR-XM184EHA	
SR type Semi-Concealed Cassette 2-Way Air Discharge			SPW-SR74GXH56B Panel PNR-S124GHB	SPW-SR94GXH56B Panel PNR-S124GHB	SPW-SR124GXH56B Panel PNR-S124GHB	SPW-SR164GXH56B Panel PNR-S124GHB	SPW-SR184GXH56B Panel PNR-S124GHB	
ADR type Semi-Concealed Cassette 1-Way Air Discharge			SPW-ADR74GXH56B Panel PNR-AD124GHB	SPW-ADR94GXH56B Panel PNR-AD124GHB	SPW-ADR124GXH56B Panel PNR-AD124GHB			
LDR type Semi-Concealed Slim Cassette				SPW-LDR94GXH56B Panel PNR-LD254GHAB	SPW-LDR124GXH56B Panel PNR-LD254GHAB	SPW-LDR164GXH56B Panel PNR-LD254GHAB	SPW-LDR184GXH56B Panel PNR-LD254GHAB	
U type Concealed Duct			SPW-U075XH	SPW-U095XH	SPW-U125XH	SPW-U165XH	SPW-U185XH	
UR type Concealed-Rectangle Duct			SPW-U075SXHT	SPW-U095SXHT	SPW-U125SXHT	SPW-U165SXHT	SPW-U185SXHT	
US type Concealed Duct			SPW-US075XH	SPW-US095XH	SPW-US125XH	SPW-US165XH	SPW-US185XH	
FUR type Floor/Ceiling Slim Concealed Duct			SPW-FUR74EXH56B	SPW-FUR94EXH56B	SPW-FUR124EXH56B	SPW-FUR164EXH56B	SPW-FUR184EXH56B	SPW-FUR224EXH56B
UMR type Concealed Duct			SPW-UMR74EXH56B	SPW-UMR94EXH56B	SPW-UMR124EXH56B	SPW-UMR164EXH56B	SPW-UMR184EXH56B	SPW-UMR224EXH56B
DR type Concealed Duct High-Static Pressure			25-48 type 76,96 type					
T type Ceiling- Mounted Units					SPW-T125XH	SPW-T165XH	SPW-T185XH	
FTR type Floor/Ceiling Mounted Units			SPW-FTR74EXH56B	SPW-FTR94EXH56B	SPW-FTR124EXH56B	SPW-FTR164EXH56B	SPW-FTR184EXH56B	SPW-FTR224EXH56B
K type Wall Mounted Units			SPW-K075XH	SPW-K095XH	SPW-K125XH			
KR type Wall-Mounted Units			SPW-KR74GXH56B	SPW-KR94GXH56B	SPW-KR124GXH56B	SPW-KR164GXH56B	SPW-KR184GXH56B	
FMR type Concealed Floor Standing Units			SPW-FMR74GXH56B	SPW-FMR94GXH56B	SPW-FMR124GXH56B	SPW-FMR164GXH56B	SPW-FMR184GXH56B	
FR type Floor Standing Units			SPW-FR74GXH56B	SPW-FR94GXH56B	SPW-FR124GXH56B	SPW-FR164GXH56B	SPW-FR184GXH56B	
GU type Total Heat Exchanger with DX coil				SPW-GU055XH		SPW-GU075XH	SPW-GU105XH	



Wider operation



Self-diagnosing function



Automatic fan operation



Mild Dry



Comfortable auto-flap control



Automatic restart function for power failure



Air Sweep



Built-in drain pump

	25	30	36	48	60	76	96	Wireless remote control		Function
	7.3 8.0	9.0 10.0	10.6 11.4	14.0 16.0	16.0 18.0	22.4 25.0	28.0 31.5	Type with built-in reception part	Type with separately installed reception part	
	25,000 27,000	30,000 34,000	36,000 39,000	47,800 54,600	54,600 61,500	76,400 85,300	95,500 107,500	•	•	
	SPW-X255XH Panel PNR-XD484GHAB		SPW-X365XH Panel PNR-XD484GHAB	SPW-X485XH Panel PNR-XD484GHAB	SPW-X605XH Panel PNR-XD484GHAB			•	•	
								•	•	
	SPW-SR254GXH56B Panel PNR-S253GHANB							•	•	
								•	•	
	SPW-LDR254GXH56B Panel PNR-LD254GHAB							•	•	
	SPW-U255XH		SPW-U365XH	SPW-U485XH	SPW-U605XH				•	
	SPW-U255SXHT	SPW-U305SXHT	SPW-U365SXHT	SPW-U485SXHT	SPW-U605SXHT				•	
									•	
									•	
									•	
	SPW-DR254GXH56B		SPW-DR364GXH56B	SPW-DR484GXH56B		SPW-DR764GXH56B	SPW-DR964GXH56B		•	
	SPW-T255XH		SPW-T365XH	SPW-T485XH				•	•	
								•	•	
								•	•	
	SPW-KR254GXH56B							•	•	
	SPW-FMR254GXH56B								•	
	SPW-FR254GXH56B								•	
									•	

Rating Conditions: Cooling Indoor 27°C DB 19°C WB Outdoor 35°C DB 24°C WB Heating Indoor 20°C DB Outdoor 7°C DB 6°C WB

MINI ECO-i

2 WAY ECO-i 5N series

3 WAY ECO-i

INDOOR UNITS

OPTIONAL PARTS

SEMI-CONCEALED 4-WAY AIR DISCHARGE

XM type

600 x 600



Option

●Wired remote controller

●Wireless remote controller

●Simplified remote controller



RCS-TM80BG



RCS-XM18BG.WL

RCS-BH80BG.WL



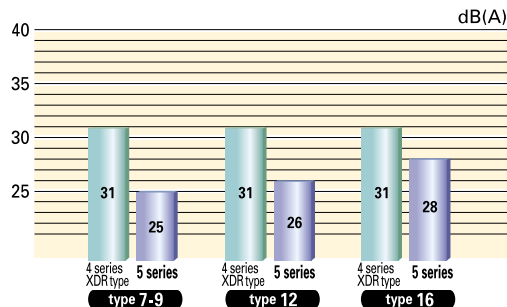
RCS-KR1AGB

●Panel

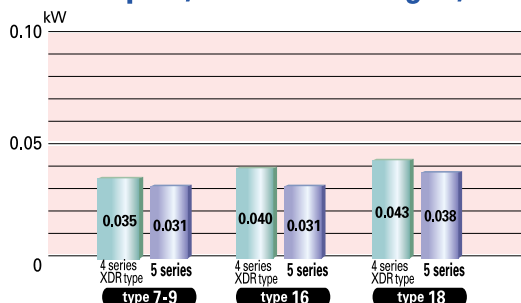


PNR-XM185

■ New turbo fans and heat exchanger fins with new shapes are adopted, and the operating sound could be dramatically reduced by max.

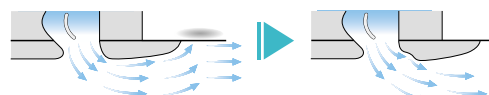


■ Wide reduction of the power consumption by adoption of newly developed DC fan motors with variable speed, new heat exchangers, etc!



■ Discharge opening and flap with new shape

The condensate and dirt appearing near the discharge ports of the conventional ceiling cassettes have been reduced.



Current

The discharged air hits the ceiling and causes dirt.

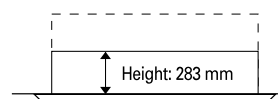
New ceiling cassette

Upward air flow is suppressed.

The flap can be removed easily for washing with water.

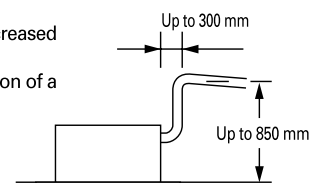


■ Lighter and thinner, easier installation!



■ A drain height of approx. 850 mm from the ceiling surface

The drain height could be increased by approx. 350 mm over the conventional value by adoption of a high-lift drain pump, and correspondence to long horizontal piping is possible.



Indoor units specifications

Model name (SPW-)		XM075XH	XM095XH	XM125XH	XM165XH	XM185XH
Power source		220/230/240V, 1 phase-50, 60Hz				
Cooling capacity	kW	2.2	2.8	3.6	4.7	5.6
	BTU/h	7,500	9,600	12,000	15,000	19,000
Heating capacity	kW	2.5	3.2	4.0	5.0	6.3
	BTU/h	8,500	11,000	14,000	17,000	21,000
Moisture Removal (High)	Liters/h	0.2	0.6	1.1	1.5	1.9
Power input	Cooling kW	0.024 / 0.025 / 0.025		0.026 / 0.027 / 0.027	0.030 / 0.031 / 0.031	0.037 / 0.038 / 0.038
	Heating kW	0.014 / 0.015 / 0.015		0.017 / 0.017 / 0.018	0.020 / 0.021 / 0.021	0.029 / 0.029 / 0.029
Running amperes	Cooling A	0.16 / 0.16 / 0.15		0.18 / 0.18 / 0.17	0.21 / 0.21 / 0.20	0.29 / 0.29 / 0.28
	Heating A	0.13 / 0.13 / 0.12		0.15 / 0.15 / 0.14	0.18 / 0.18 / 0.17	0.26 / 0.26 / 0.25
Fan motor	Type	Centrifugal fan				
	Airflow rate (H/M/L) m³/min	8 / 7 / 6		9 / 8 / 7	10.7 / 8.5 / 7.5	12.5 / 10.5 / 9
	Output kW	0.020				
Power sound level (H/M/L)	dB(A)	46 / 43 / 41		49 / 46 / 42	53 / 48 / 45	58 / 54 / 50
Operating sound (H/M/L)	dB(A)	30 / 27 / 25		32 / 29 / 26	36 / 32 / 28	41 / 37 / 33
Dimensions	Height mm	283				
	Width mm	575 <625>				
	Depth mm	575 <625>				
Piping connections	Liquid (Flare) mm	6.35 (1/4)				
	Gas (Flare) mm	12.7 (1/2)				
	Drain piping	VP-20				
Net weight	kg	16 + <2.4>				

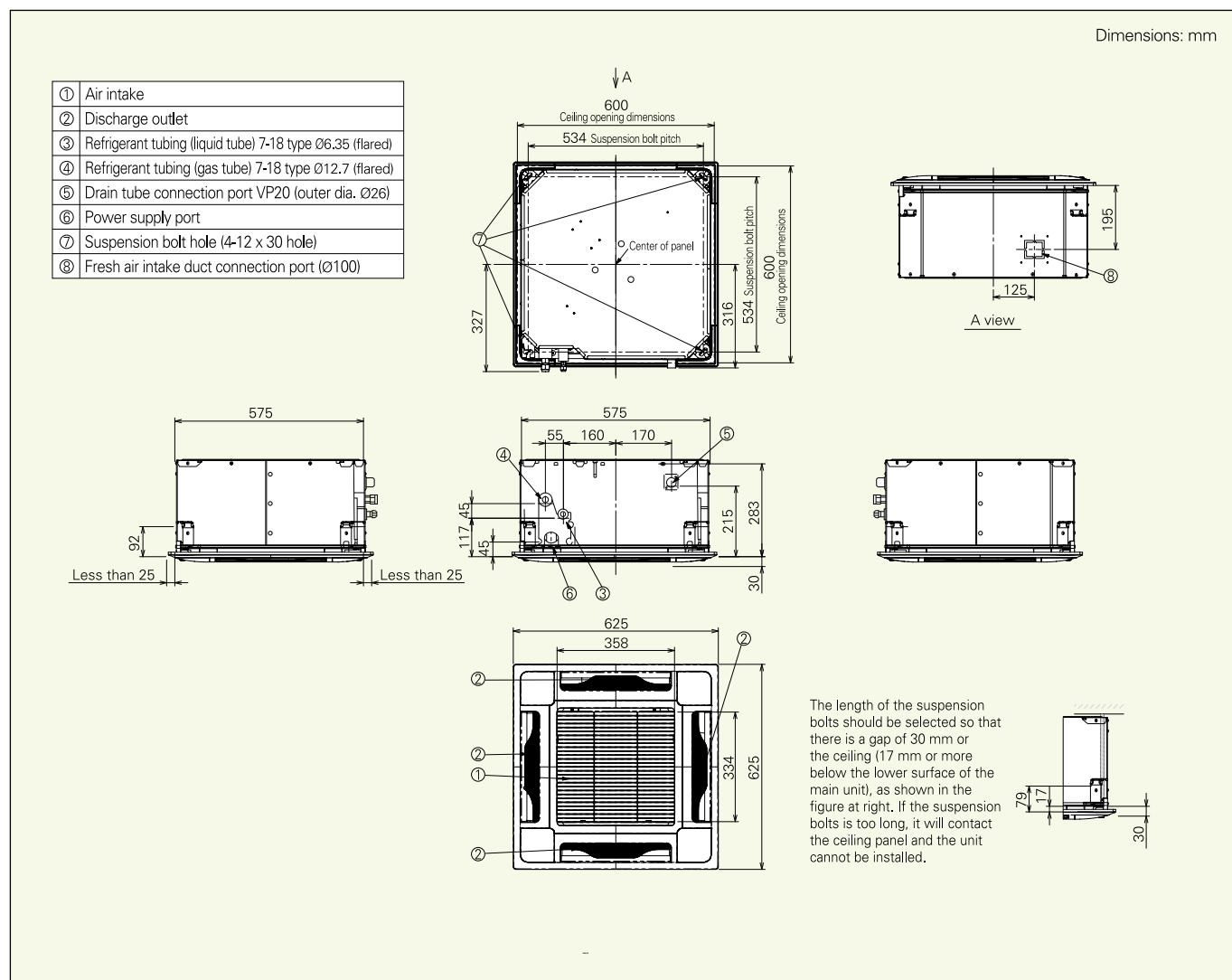
Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in < > for external dimensions and net weight are the values for the optional ceiling panel. Data subject to change without notice.

Dimensional data



SEMI-CONCEALED CASSETTE 4-WAY AIR DISCHARGE

X type



Option

- Wired remote controller
- Wireless remote controller
- Simplified remote controller



RCS-TM80BG



RCS-SH80BG.WL



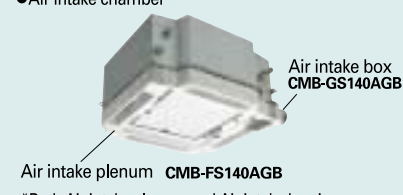
RCS-KR1AGB

- Panel



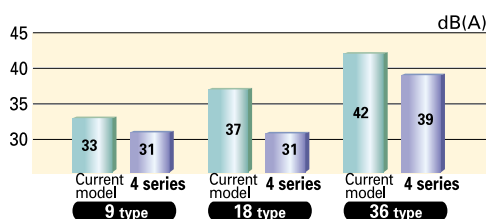
PNR-XD484GHAB

- Air intake chamber

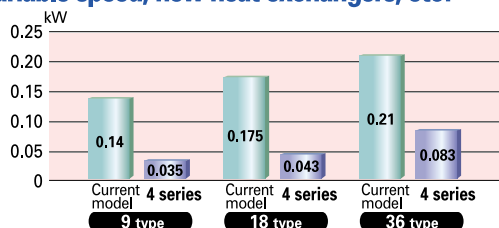


*Both Air intake plenum and Air intake box is necessary

Turbo fans and heat exchanger fins with new shapes are adopted, and the operating sound could be reduced by max. 6 dB (A)!

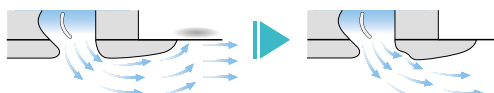


Wide reduction of the power consumption by adoption of newly developed DC fan motors with variable speed, new heat exchangers, etc!



Discharge opening and flap with new shape

The condensate and dirt appearing near the discharge ports of the conventional ceiling cassettes have been reduced.



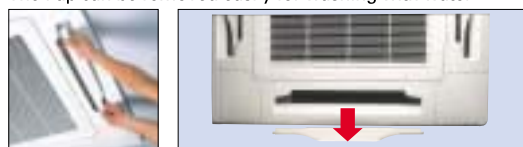
Current

The discharged air hits the ceiling and causes dirt.

New ceiling cassette

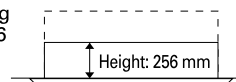
Upward air flow is suppressed.

The flap can be removed easily for washing with water.



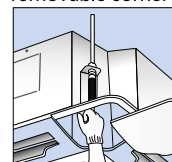
Lighter and thinner, easier installation!

- The top class lightest weight with 26 kg (for type 36~60), body height only 256 mm (7~25), so that installation is possible even in narrow ceilings.



Easy fine adjustment of the body suspension height!

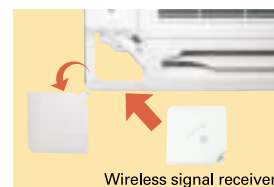
The four corners of the ceiling panel have adopted removable corner pockets.



Even after installation, fine adjustment of the suspension height is possible easily by removing the corner pockets.

Light, thin, and attractive design with easy installation

- The direction of the air intake grille can be changed.
- A wireless remote control light receiver can be installed by changing the corner cover. The installation can be done in a short time.



Wireless signal receiver

Easy servicing of the drain pan

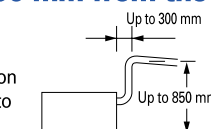
A large-diameter (45 mm) drain pan inspection port has been provided, and drain pan and drain pump can be cleaned easily.



45mm
Drain pan
inspection port

A drain height of approx. 850 mm from the ceiling surface

The drain height could be increased by approx. 350 mm over the conventional value by adoption of a high-lift drain pump, and correspondence to long horizontal piping is possible.



Indoor units specifications

Model name		(SPW-)	X075XH	X095XH	X125XH	X165XH	X185XH	X255XH	X365XH	X485XH	X605XH
Power source			220/230/240V, 1 phase-50, 60Hz								
Cooling capacity		kW	2.2	2.8	3.6	4.5	5.6	7.3	10.6	14.0	16.0
		BTU/h	7,500	9,600	12,000	15,000	19,000	25,000	36,000	47,800	54,600
Heating capacity		kW	2.5	3.2	4.2	5.0	6.3	8.0	11.4	16.0	18.0
		BTU/h	8,500	11,000	14,000	17,000	21,000	27,000	39,000	54,600	61,400
Power input	Cooling	kW	0.035/0.035/0.036			0.039/0.040/0.041	0.042/0.043/0.044	0.052/0.052/0.053	0.082/0.083/0.083	0.111/0.112/0.113	0.117/0.118/0.122
	Heating	kW	0.027/0.027/0.028			0.030/0.031/0.032	0.032/0.033/0.034	0.042/0.043/0.043	0.074/0.076/0.077	0.103/0.103/0.104	0.108/0.108/0.111
Running amperes	Cooling	A	0.27/0.27/0.26			0.31/0.30/0.30	0.34/0.33/0.32	0.43/0.42/0.41	0.67/0.63/0.60	0.91/0.88/0.84	0.97/0.92/0.92
	Heating	A	0.23/0.23/0.22			0.26/0.25/0.25	0.29/0.28/0.28	0.38/0.36/0.35	0.64/0.63/0.62	0.89/0.88/0.86	0.96/0.95/0.93
Fan motor	Type	Turbo fan *1									
	Airflow rate (H/M/L)	m³/min	15.5/14/13				16/14/13	20/16/14	28/23/21	33/25/22	34/27/23
	Output	kW	0.05						0.09		
Power sound level (H/M/L)		dB(A)	42/40/38					45/42/39	50/47/44	53/49/45	55/51/47
Pressure sound level (H/M/L)		dB(A)	31/29/27					34/31/28	39/36/33	42/38/34	44/40/36
Dimensions	Height	mm	256 + <35>						319 + <35>		
	Width	mm	840 <950>								
	Depth	mm	840 <950>								
Piping connections	Liquid (Flare)	mm	6.35					9.52			
	Gas (Flare)	mm	12.7					15.88			
	Drain piping		VP-25								
Net weight		kg	21 + <4.5>					22 + <4.5>	26 + <4.5>		

Rated conditions

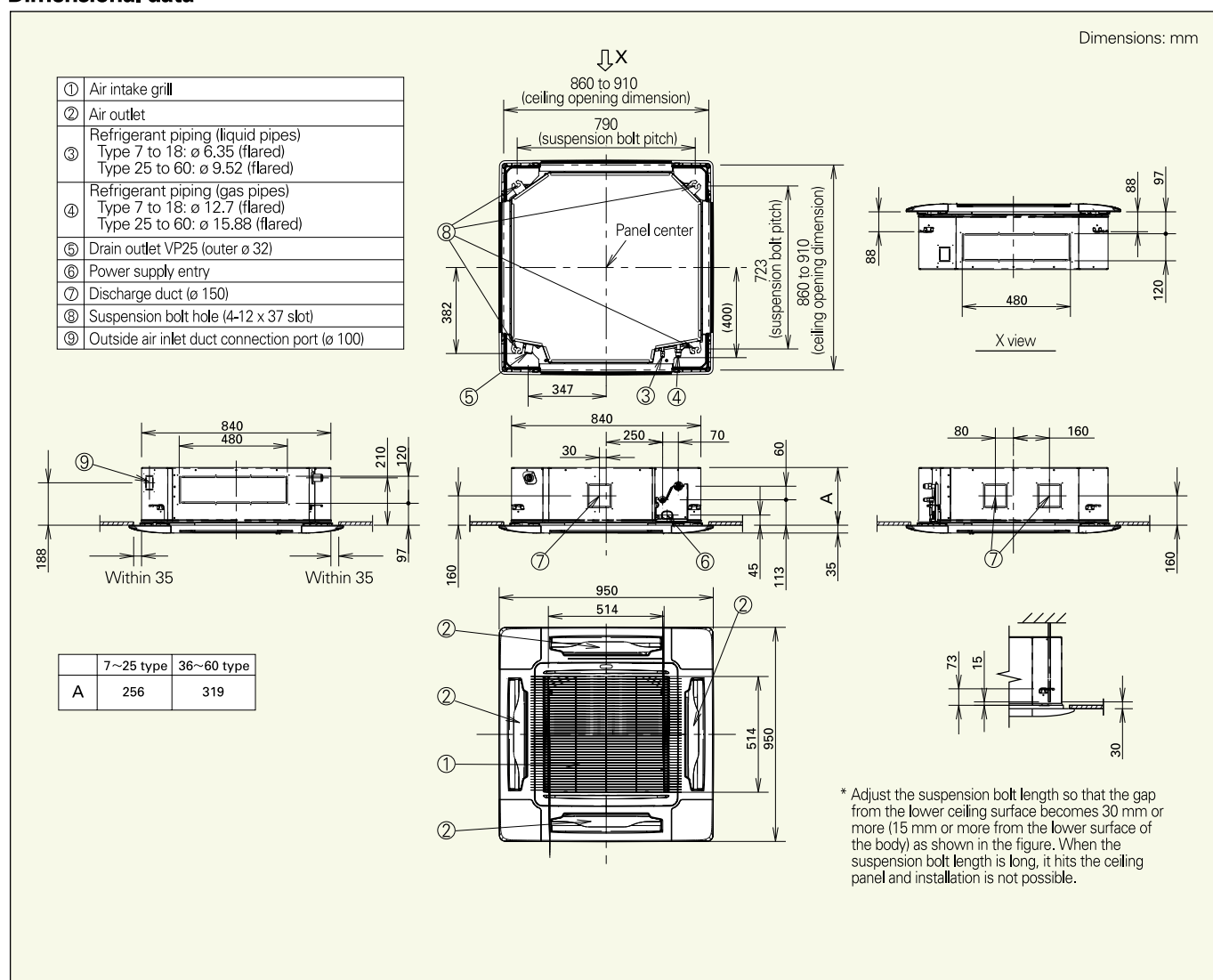
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in < > for external dimensions and net weight are the values for the optional ceiling panel.

Data subject to change without notice.

Dimensional data



SEMI-CONCEALED CASSETTE 4-WAY AIR DISCHARGE

XMR type



Option

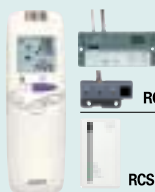
●Wired remote controller

●Wireless remote controller

●Simplified remote controller



RCS-TM80BG



RCS-BH80BG.WL

RCS-SS80BG.WL



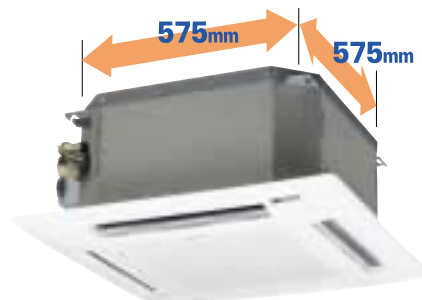
RCS-KR1AGB

●Panel



PNR-XM184EHAB

- New dimensions 600 x 600 mm suitable for European under ceiling standards
- Three-speed centrifugal fan
- Anti-mould and anti-bacteria washable filters
- Low operating sound



Rated conditions	Data subject to change without notice.
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB	
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB	

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SEMI-CONCEALED CASSETTE 2-WAY AIR DISCHARGE

SR_{type}



Option

- Wired remote controller
- Wireless remote controller
- Simplified remote controller



RCS-TM80BG



RCS-BH80BG.WL



RCS-SS80BG.WL



RCS-KR1AGB

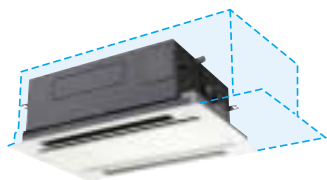
- Panel



PNR-S253GHANB (For 254 type)
PNR-S124GHB (For 74 ~184 type)

Realization of thin, compact, and light units!

Remarkable size and weight reductions have been realized by improvement of the design around the fan. In addition, the size for the type 18 has been reduced by one rank compared to current model.



In case of the type 18

Body volume
Approx. 30% reduction
Weight (body + panel)
Reduction from 50 kg to 30 kg
(approx. 40% reduction)

Comparison with the current type

	7 type	25 type
Body volume	Approx. 14% reduction	Approx. 12% reduction
Weight (body + panel)	40 kg to 30 kg (approx. 25% reduction)	50 kg to 39 kg (approx. 22% reduction)

Silent design

Low operating sound in the top class of the industry have been realized by adoption of high-efficiency fans.

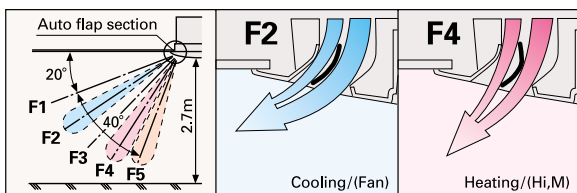
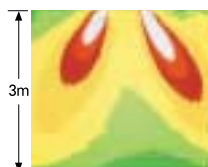
Operation noise

7 type	9 type	12 type	16·18 type	25 type
30 · 24	33 · 26	34 · 28	35 · 29	38 · 33

High/low notch, dB/A

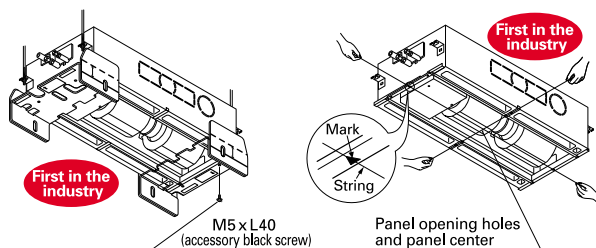
Realization of most suitable air flow for heating and cooling

Automatic setting to the most suitable flap angle for heating and cooling and an auto-swing mechanism for widening of the air flow are provided.

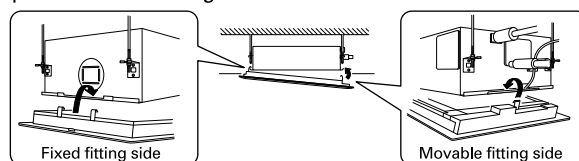


Excellent installation performance

- The packing pad can be used for the ceiling opening dimensions and for adjustment of the height of the indoor unit.

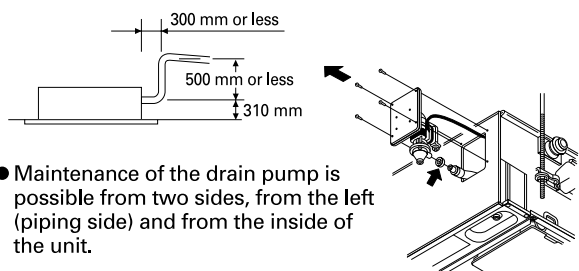


- Even large ceiling panels can be installed easily by the provisional fastening method.



Adoption of a power up-drain pump

- Drain up is possible up to 500 mm from the drain port.



- Maintenance of the drain pump is possible from two sides, from the left (piping side) and from the inside of the unit.

Simple maintenance

The drain pan is equipped with site wiring and can be removed. The fan case has a split construction, and the fan motor and the fan can be removed easily when the lower case is removed.

Indoor units specifications

Model name (SPW-)		SR74GXH56B	SR94GXH56B	SR124GXH56B	SR164GXH56B	SR184GXH56B	SR254GXH56B
Power source		220/230/240V, 1 phase-50, 60Hz					
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	7.3
	BTU/h	7,500	9,600	12,000	15,000	19,000	25,000
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	8.0
	BTU/h	8,500	11,000	14,000	17,000	21,000	27,000
Power input	Cooling kW	0.086/0.090/0.095	0.086/0.092/0.097	0.088/0.093/0.099	0.091/0.097/0.103	0.135/0.145/0.154	
	Heating kW	0.055/0.058/0.062	0.055/0.060/0.064	0.057/0.061/0.066	0.060/0.065/0.070	0.100/0.109/0.117	
Running amperes	Cooling A	0.45/0.45/0.45	0.44/0.45/0.45	0.44/0.45/0.45	0.45/0.45/0.45	0.64/0.65/0.66	
	Heating A	0.29/0.29/0.30	0.28/0.29/0.30	0.28/0.29/0.30	0.29/0.29/0.30	0.46/0.48/0.49	
Fan motor	Type	Sirocco fan *1					Sirocco fan *2
	Airflow rate (H/M/L) m ³ /min	8/7/6	9/8/7	9.6/8.6/7.6	11/9/8		19/16/14
	Output kW	0.03					0.05
Power sound level (H/M/L)	dB(A)	40/38/35	44/40/37	45/42/39	46/44/40		49/46/44
Pressure sound level (H/M/L)	dB(A)	30/27/24	33/29/26	34/31/28	35/33/29		38/35/33
Dimensions	Height mm	350 + <8>					
	Width mm	840 <1060>					1140 <1360>
	Depth mm	600 <680>					
Piping connections	Liquid (Flare) mm	6.35					9.52
	Gas (Flare) mm	12.7					15.88
	Drain piping	VP-25					
Net weight	kg	23 + <7>					30 + <9>

Rated conditions

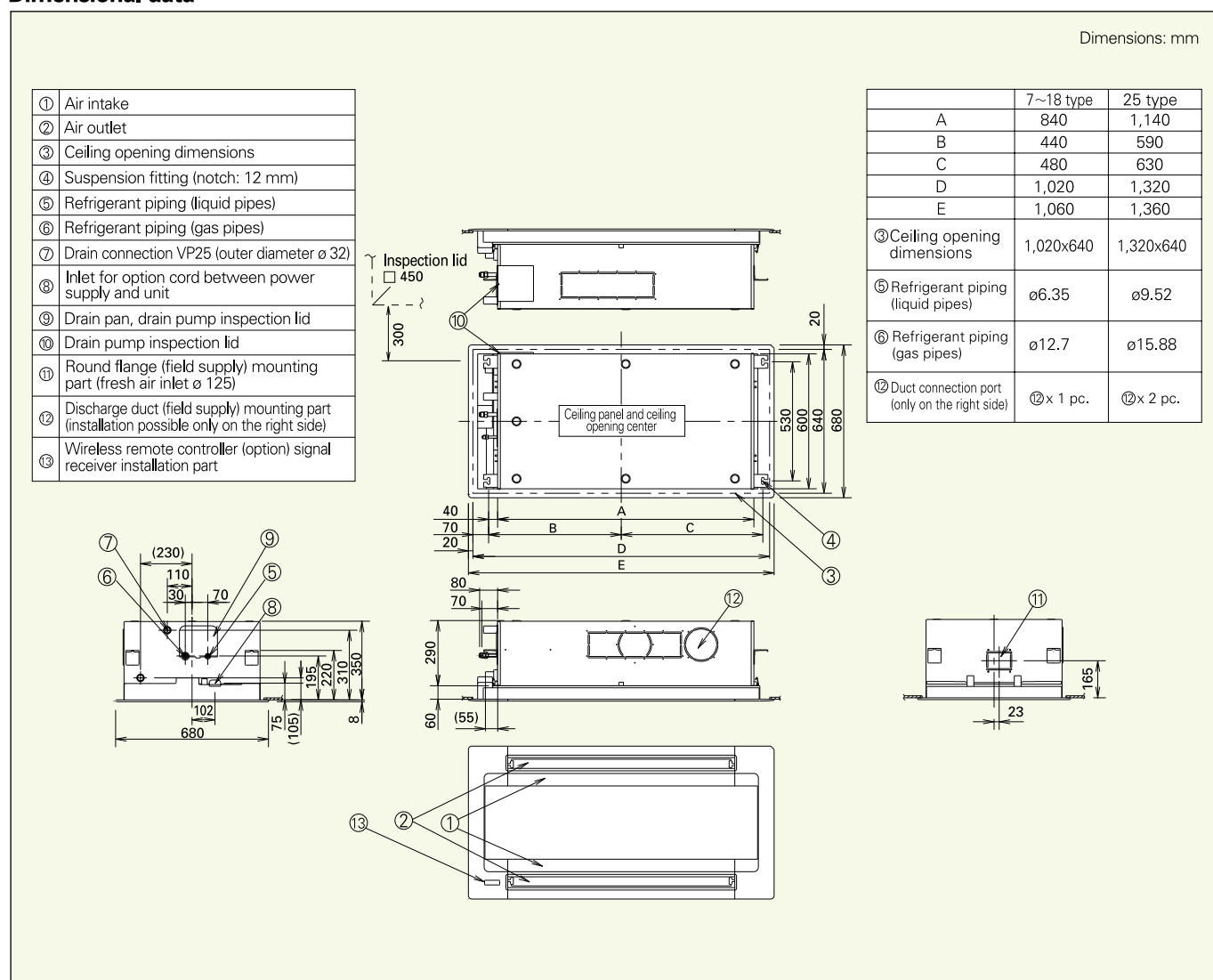
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in < > for external dimensions and net weight are the values for the optional ceiling panel.

Data subject to change without notice.

Dimensional data



SEMI-CONCEALED CASSETTE 1-WAY AIR DISCHARGE

ADR^{type}



Option

- Wired remote controller
- Wireless remote controller
- Simplified remote controller



RCS-TM80BG



RCS-TRP80BG.WL



RCS-BH80BG.WL



RCS-KR1AGB

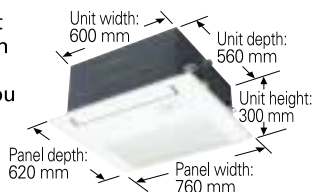
- Panel



PNR-AD124GHB

■ Compact Size in the top class of the industry

The compact design keeps unit width and height to a minimum and delivers the industry's smallest panel width, giving you plenty of leeway in selecting an installation space.



■ Lightweight Construction in the top class of the industry

With a maximum unit weight of 8.5 kg, installation work is a snap.

Weight of Products (kg)

Type	Unit weight (including Panel)	
	B type	Current model
7 type	17+(2.5)	23+(3)
9 type	17+(2.5)	23+(3)
12 type	17+(2.5)	25+(3)

■ Quiet Operation in the top class of the industry

With operating noise reduced by up to 3 dB(A) over existing models, the unit creates a quiet, comfortable room environment.

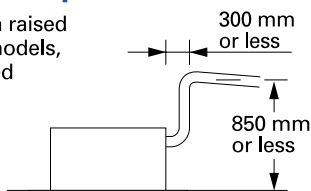
Operation noise dB(A)

(High/Low operation)

Type	B type	Current model
7 type	33 / 29	34 / 30
9 type	33 / 29	34 / 30
12 type	36 / 31	39 / 33

■ Quiet Operation in the top class of the industry

The drain height has been raised by 63 mm over existing models, so operation can be started from the ceiling and pipe layout design has greater freedom.



■ Auto Flap and Auto Swing Functions

The Auto Flap function lets you set the air direction by remote control, and the Auto Swing function delivers a uniform amount of air to every part of the room. What is more, the flap can be closed when the unit is not operating to keep dust from entering the room.

■ The hanging height of the unit can be easily adjusted



Adjustable covers are equipped on both sides of the ceiling panel so that the hanging height of the unit can be adjusted even after the panel has been installed.

- Adjustable covers on both sides of panel



Indoor units specifications

Model name (SPW-)		ADR74GXH56B	ADR94GXH56B	ADR124GXH56B
Power source		220/230/240V, 1 phase-50, 60Hz		
Cooling capacity	kW	2.2	2.8	3.6
	BTU/h	7,500	9,600	12,000
Heating capacity	kW	2.5	3.2	4.2
	BTU/h	8,500	11,000	14,000
Power input	Cooling kW	0.060/0.061/0.063		0.064/0.064/0.067
	Heating kW	0.037/0.037/0.038		0.039/0.039/0.04
Running amperes	Cooling A	0.24/0.23/0.22		0.25/0.24/0.24
	Heating A	0.16/0.16/0.16		0.17/0.17/0.17
Fan motor	Type	Sirocco fan *1		
	Airflow rate (H/M/L) m ³ /min	8/7/6		9/8/7
	Output kW	0.02		
Power sound level (H/M/L)	dB(A)	44/42/40		47/45/42
Pressure sound level (H/M/L)	dB(A)	33/31/29		36/34/31
Dimensions	Height mm	300 + <30>		
	Width mm	600 <760>		
	Depth mm	560 <620>		
Piping connections	Liquid (Flare) mm	6.35		
	Gas (Flare) mm	12.7		
	Drain piping	VP-25		
Net weight	kg	17 + <2.5>		

Rated conditions

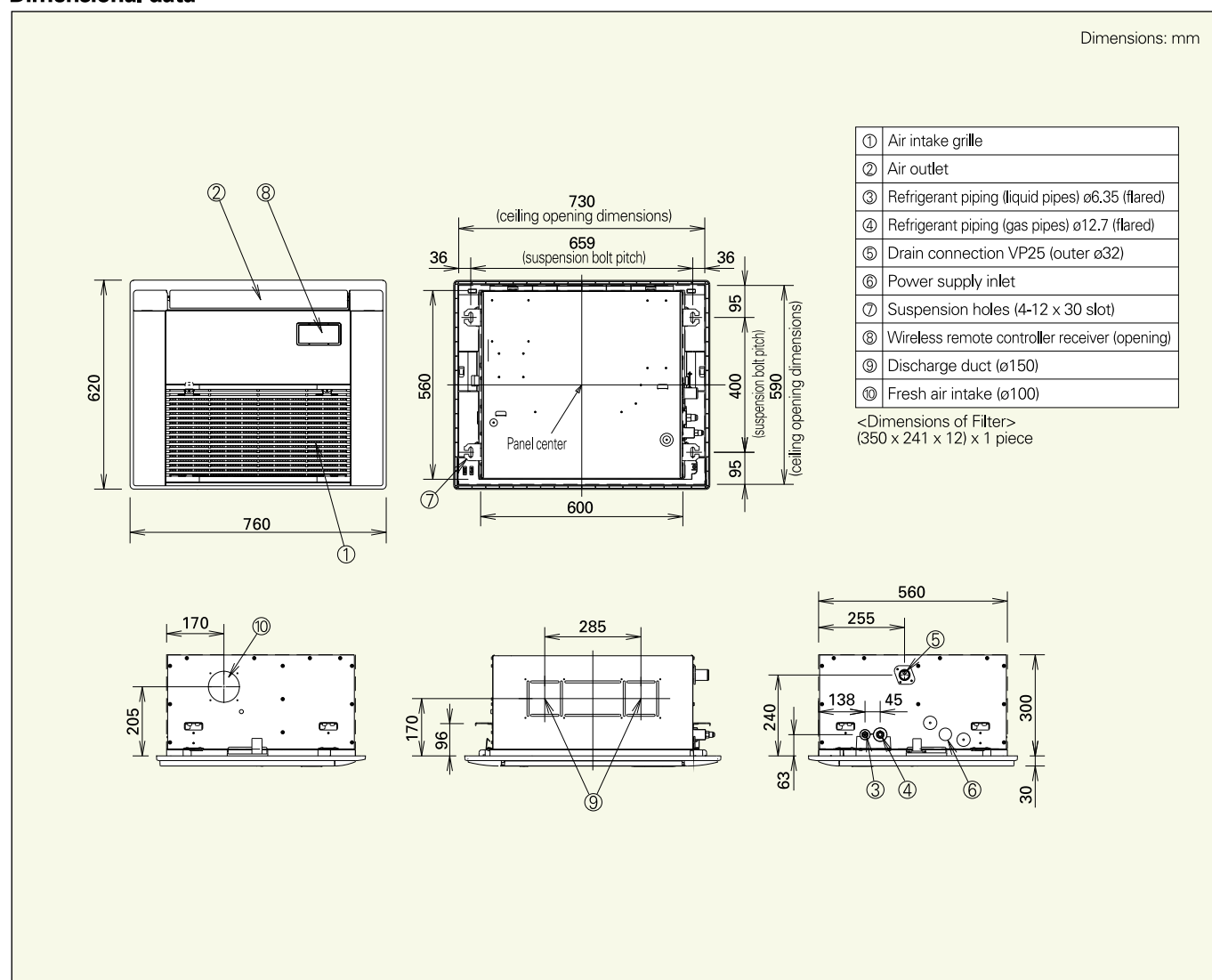
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in < > for external dimensions and net weight are the values for the optional ceiling panel.

Data subject to change without notice.

Dimensional data



SEMI-CONCEALED SLIM CASSETTE

LDR^{type}



Our slim model, which is only 200mm in depth, can air-condition spaces with ceiling heights up to 4.2m.



Option

●Wired remote controller

RCS-TM80BG

●Wireless remote controller

RCS-BH80BG.WL

●Simplified remote controller

RCS-KR1AGB

RCS-TRP80BG.WL

●Panel

PNR-LD254GHAB

Top industrial capacity*¹ to handle ceiling heights up to 4.2m

●Attained height/ceiling height based on fan motor speed setting (m)

Indoor unit type Fan speed setting	9-type~18-type		25-type	
	Attained height	Ceiling height	Attained height	Ceiling height
Factory setting	3.2	3.5	3.5	3.8
High-ceiling setting	3.9	4.2	3.9	4.2
Ceiling-mounted installation	2.4	2.7	2.4	2.7

*1 With one-direction type for high ceilings (current as of November 2004)

*2 For setting method, refer to the installation instructions that came with the ceiling panel.

Lightweight, Compact and Quiet

With a full model change, all models are now the top industrial lightweight units*. And with all models having coordinated dimensions between the unit and the panel, multi-unit installations have a smart, attractive appearance. (* Current as of November 2004)

Product (unit + panel) weight (kg)

	Current model	New model	Reduction
9/12 type	26+(8)kg	21+(5.5)kg	22%
16/18 type	27+(8)kg	21+(5.5)kg	24%
25 type	30+(9)kg	22+(5.5)kg	29%

Operating noise [dB(A)] (High/Low operation)

	Current model	New model
9/12 type	43/33	36/33
16 type	44/35	36/34
18 type	44/35	38/34
25 type	46/36	45/36

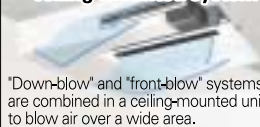
With 3 types of air-blow systems, the units can be used in various ways.

(1) One-direction down-blow system



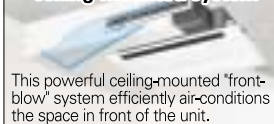
Powerful one-direction "down-blow" system reaches the floor even from high ceilings (up to 4.2m).

(2) Two-direction ceiling-mounted system



"Down-blow" and "front-blow" systems are combined in a ceiling-mounted unit to blow air over a wide area.

(3) One-direction ceiling-mounted system



This powerful ceiling-mounted "front-blow" system efficiently air-conditions the space in front of the unit.



Smudge-free operation

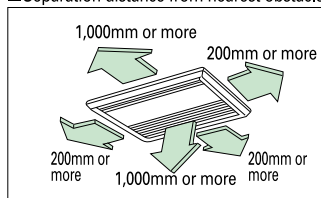
Setting the flap in the smudge-free position suppresses soiling around the air outlet that is seen in conventional ceiling cassettes, so the ceiling stays clean at all times.

The hanging height of the unit can be easily adjusted.

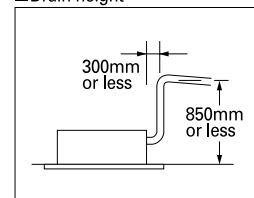
The up-down position of the unit can be easily adjusted by simply removing the panel side covers, without having to remove the ceiling panel.



Separation distance from nearest obstacle



Drain height



Indoor units specifications

Model name (SPW-)		LDR94GXH56B	LDR124GXH56B	LDR164GXH56B	LDR184GXH56B	LDR254GXH56B
Power source		220/230/240V, 1 phase-50, 60Hz				
Cooling capacity	kW	2.8	3.6	4.5	5.6	7.3
	BTU/h	9,600	12,000	15,000	19,000	25,000
Heating capacity	kW	3.2	4.2	5.0	6.3	8.0
	BTU/h	11,000	14,000	17,000	21,000	27,000
Power input	Cooling kW	0.050/0.051/0.052			0.058/0.060/0.061	0.086/0.087/0.089
	Heating kW	0.039/0.040/0.042			0.046/0.048/0.049	0.075/0.076/0.077
Running amperes	Cooling A	0.40/0.39/0.39			0.46/0.46/0.46	0.71/0.70/0.69
	Heating A	0.36/0.35/0.35			0.42/0.41/0.41	0.66/0.65/0.63
Fan motor	Type	Sirocco fan *2				
	Airflow rate (H/M/L) m ³ /min	12/10/9			13/11.5/10	18/15/13
	Output kW	0.05				
Power sound level (H/M/L)	dB(A)	47/45/44			49/47/45	56/51/47
Pressure sound level (H/M/L)	dB(A)	36/34/33			38/36/34	45/40/36
Dimensions	Height mm	200 + <20>				
	Width mm	1,000 <1,230>				
	Depth mm	710 <800>				
Piping connections	Liquid (Flare) mm	6.35				9.52
	Gas (Flare) mm	12.7				15.88
	Drain piping	VP-25				
Net weight	kg	21 + <5.5>				22 + <5.5>

Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

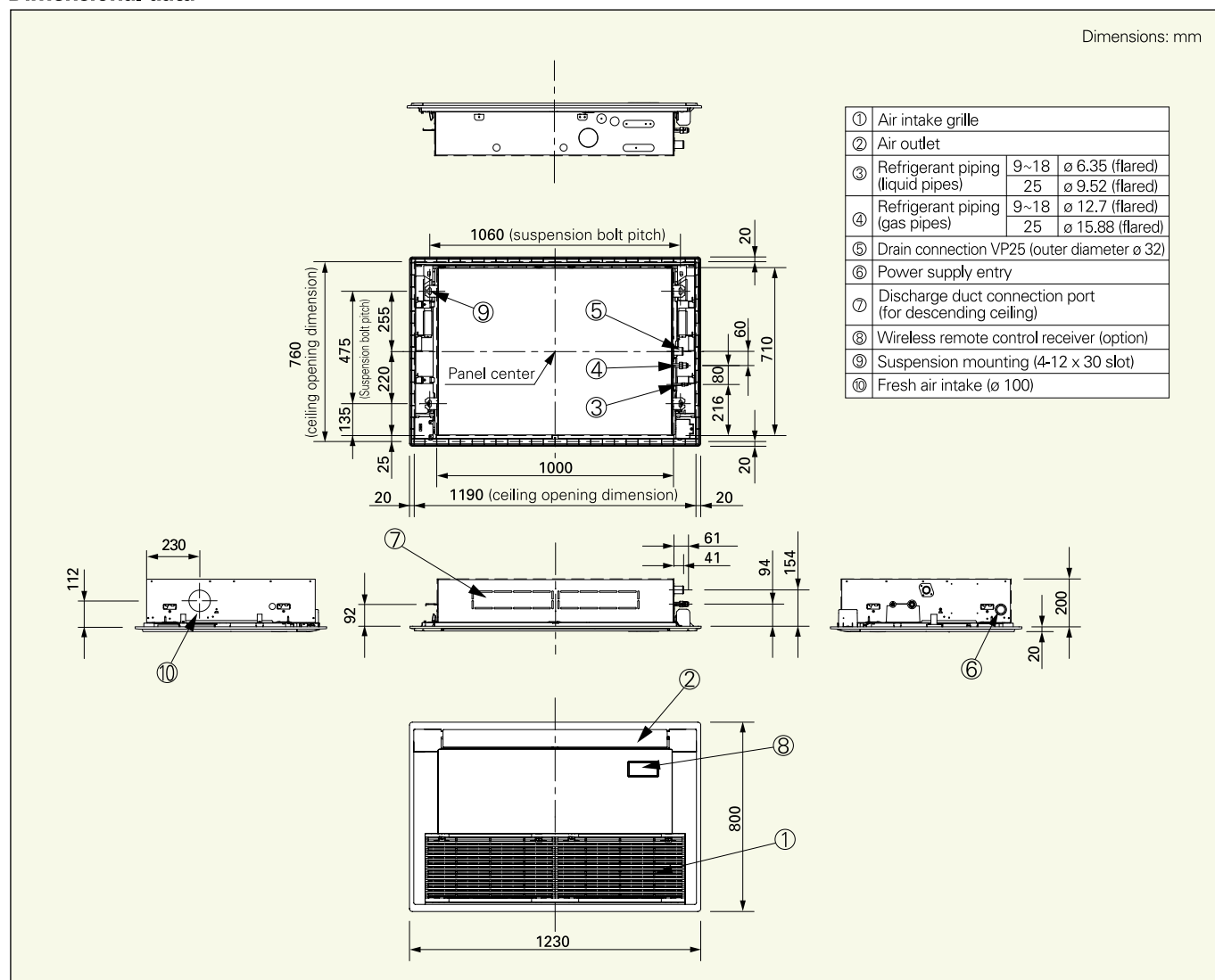
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in < > for external dimensions and net weight are the values for the optional ceiling panel.

* The values in () for air flow rate and operating sound are for use of the accessory cable.

Data subject to change without notice.

Dimensional data



CONCEALED DUCT

U type



Option

- Wired remote controller
- Wireless remote controller
- Simplified remote controller



RCS-TM80BG



RCS-BH80BG.WL



RCS-KR1AGB

Realized comfortable space by dispersed arrangement of discharge ports.



The static pressure outside the unit can be increased!

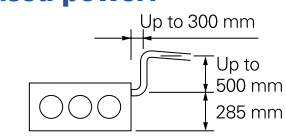
By using the booster cable, the static pressure outside the unit can be increased.

type	7·9·12	16·18	25	36	48·60
Standard	49	40	50	79	78
With booster cable use	69	62	92	122	113

(Pa)

Drain pump with increased power!

By adoption of a high-lift drain pump, the drain piping rise height could be increased to 785 mm from the lower surface of the body.



Easy maintenance by external installation of the electric equipment box!

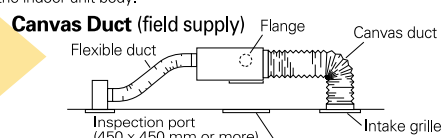


Body electric equipment box

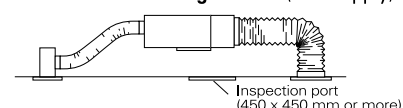


System example

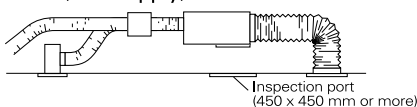
An inspection port (450 mm x 450 mm or more) is required at the lower side of the indoor unit body.



High-Performance Filter · Long-life filter (field supply)



Distributor (field supply)



Unified body height of approx. 310 mm for all models

Even models with different capacities can be installed smoothly in the ceiling.

Indoor units specifications

Model name		(SPW-)	U075XH	U095XH	U125XH	U165XH	U185XH	U255XH	U365XH	U485XH	U605XH	
Power source			220/230/240V, 1 phase-50, 60Hz									
Cooling capacity		kW	2.2	2.8	3.6	4.5	5.6	7.3	10.6	14.0	16.0	
		BTU/h	7,500	9,600	12,000	15,000	19,000	25,000	36,000	47,800	54,600	
Heating capacity		kW	2.5	3.2	4.2	5.0	6.3	8.0	11.4	16.0	18.0	
		BTU/h	8,500	11,000	14,000	17,000	21,000	27,000	39,000	54,600	61,400	
Power input		Cooling kW	0.094/0.100/0.106			0.096/0.102/0.109		0.180/0.195/0.210	0.312/0.327/0.342	0.308/0.325/0.341		
		Heating kW	0.082/0.088/0.094			0.084/0.090/0.097		0.168/0.183/0.198	0.300/0.315/0.330	0.296/0.313/0.329		
Running amperes		Cooling A	0.45/0.46/0.47			0.44/0.45/0.46		0.83/0.86/0.89	1.44/1.45/1.46	1.42/1.43/1.44		
		Heating A	0.40/0.41/0.42			0.39/0.40/0.41		0.78/0.81/0.84	1.39/1.40/1.41	1.36/1.37/1.38		
Fan motor		Type	Sirocco fan *1					Sirocco fan *2	Sirocco fan *3			
		Airflow rate (H/M/L)	m³/min	10/8.5/7			12/10.5/9		18/15/13	30/26/21	33/30/25	
		Output	kW	0.05					0.07	0.14		
		External static pressure	Pa	49(69)			40(62)		50(92)	79(122)	78(113)	
Power sound level (H/M/L)		dB(A)	40/37/33			41/39/36		45/41/38	49/44/42	51/48/44		
Pressure sound level (H/M/L)		dB(A)	(32)/29/26/22			(33)/30/28/25		(38)/34/30/27	(42)/38/33/31	(44)/40/37/33		
Dimensions		Height	mm 310									
		Width	mm 700						1000	1480		
		Depth	mm 630									
Piping connections		Liquid (Flare)	mm 6.35						9.52			
		Gas (Flare)	mm 12.7						15.88			
		Drain piping	VP-25									
Net weight		kg	24			25		32	47			

Rated conditions

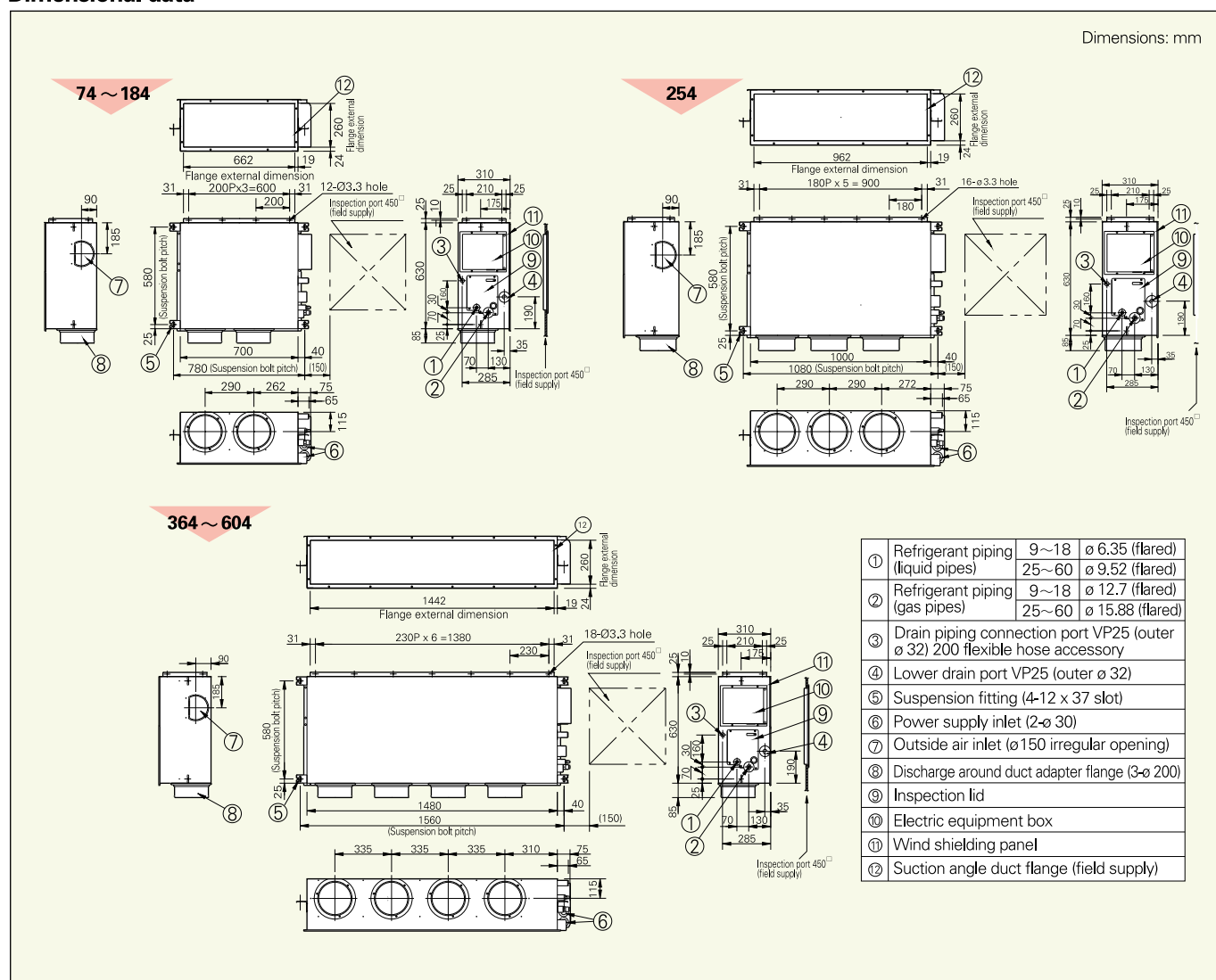
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in () for the external static pressure and operating sound are for use of booster cable.

Data subject to change without notice.

Dimensional data



CONCEALED-RECTANGLE DUCT TYPE

UR^{type}



Option

- Wired remote controller
- Wireless remote controller
- Simplified remote controller



RCS-TM80BG



RCS-BH80BG.WL



RCS-KR1AGB

The static pressure outside the unit can be increased!

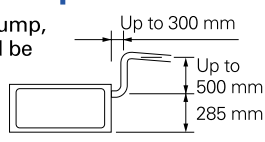
By using the booster cable, the static pressure outside the unit can be increased.

(Pa)

type	7·9·12	16·18	25·30	36	48·60
Standard	49	40	50	79	78
With booster cable use	69	62	92	122	113

Drain pump with increased power!

By adoption of a high-lift drain pump, the drain piping rise height could be increased to 785 mm from the lower surface of the body.



Easy maintenance by external installation of the electric equipment box!



Body electric equipment box

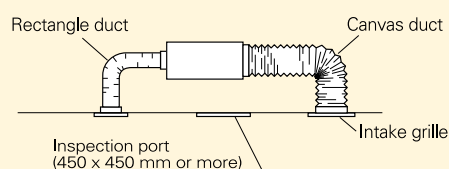
Anti-mould washable filters included

Unified body height of approx. 310 mm for all models

Even models with different capacities can be installed smoothly in the ceiling.

System example

An inspection port (450 mm x 450 mm or more) is required at the lower side of the indoor unit body.



Indoor units specifications

Model name (SPW-)		U075SXHT	U095SXHT	U125SXHT	U165SXHT	U185SXHT	U255SXHT	U305SXHT	U365SXHT	U485SXHT	U605SXHT	
Power source		220/230/240V, 1 phase-50Hz										
Cooling capacity	kW	2.2	2.8	3.6	4.5	5.6	7.3	9.0	10.6	14.0	16.0	
	BTU/h	7,500	9,600	12,000	15,000	19,000	25,000	30,000	36,000	47,800	54,600	
Heating capacity	kW	2.5	3.2	4.2	5.0	6.3	8.0	10.0	11.4	16.0	18.0	
	BTU/h	8,500	11,000	14,000	17,000	21,000	27,000	34,000	39,000	54,600	61,400	
Power input	Cooling	kW0.094 / 0.100 / 0.106		0.109 / 0.102 / 0.096		0.096 / 0.102 / 0.109		0.180 / 0.195 / 0.210		0.187 / 0.203 / 0.219		
	Heating	kW0.082 / 0.088 / 0.094		0.097 / 0.090 / 0.084		0.084 / 0.090 / 0.097		0.168 / 0.183 / 0.198		0.176 / 0.191 / 0.207		
Running amperes	Cooling	A0.45 / 0.46 / 0.47		0.46 / 0.45 / 0.44		0.44 / 0.45 / 0.46		0.83 / 0.86 / 0.89		0.88 / 0.91 / 0.94		
	Heating	A0.40 / 0.41 / 0.42		0.41 / 0.40 / 0.39		0.39 / 0.40 / 0.41		0.78 / 0.81 / 0.84		0.84 / 0.87 / 0.90		
Fan motor	Type	Sirocco fan *1					Sirocco fan *2			Sirocco fan *3		
	Airflow rate (H/M/L)	m³/min10 / 8.5 / 7		12 / 10.5 / 9			18 / 15 / 13		20 / 17 / 14		30 / 26 / 21	33 / 30 / 25
	Output	kW0.05					0.07			0.14		
	External static pressure	Pa49(69)					40(62)			50(92)		79(122)
Power sound level (H/M/L)		dB(A)40 / 37 / 33			41 / 39 / 36			45 / 41 / 38		49 / 44 / 42		51 / 48 / 44
Pressure sound level (H/M/L)		dB(A)(33) / 29 / 26 / 22			(33) / 30 / 28 / 25			(38) / 34 / 30 / 27		(38) / 34 / 30 / 27		(42) / 38 / 33 / 31
Dimensions	Height	mm310										
	Width	mm700					1000			1480		
	Depth	mm630										
Piping connections	Liquid (Flare)	mm6.35 (1/4)					9.52 (3/8)					
	Gas (Flare)	mm12.7 (1/2)					15.88 (5/8)					
	Drain piping	VP-25										
Net weight		kg24			25			32		47		

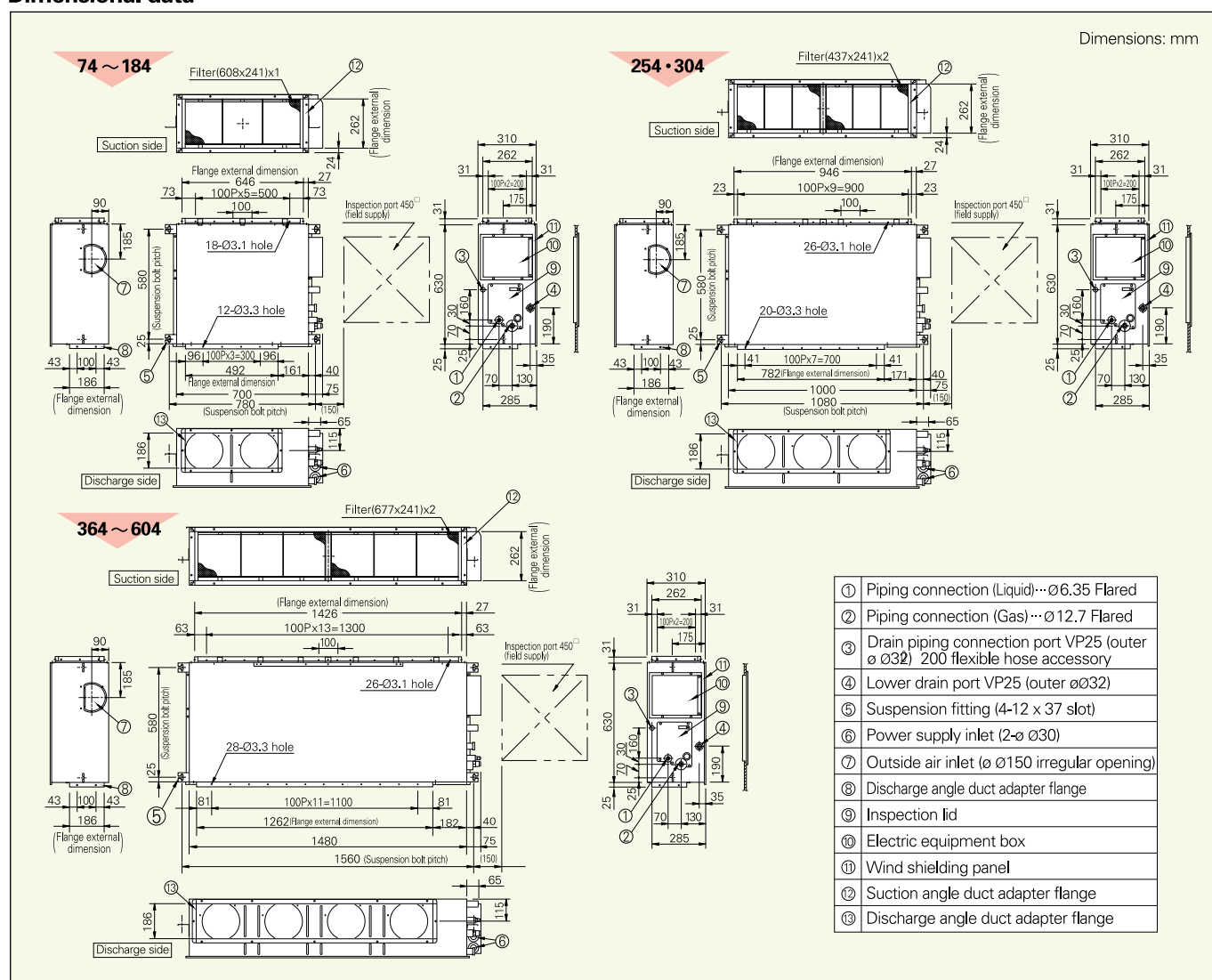
Rated conditions

Cooling: Indoor air temperature 27 °C DB/19°C WB, outdoor air temperature 35 °C DB
Heating: Indoor air temperature 20 °C DB, outdoor air temperature 7 °C DB/6°C WB

* The values in () for the external static pressure and operating sound are for use of booster cable.

Data subject to change without notice.

Dimensional data



US^{type}



■ Option

● Timer remote controller

● Wireless remote controller

● Simplified remote controller



RCS-TM80BG



RCS-BH80BG.WL



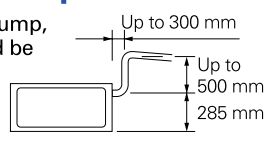
RCS-KR1AGB

■ Ultra-slim profile: 200 mm for all models



■ Drain pump with increased power!

By adoption of a high-lift drain pump, the drain piping rise height could be increased to 785 mm from the lower surface of the body.



■ Ideal for hotel application with very thin false-ceiling

■ Extremely silent: 25 dB-A at low speed (Class 7)

■ Anti-mould washable filters included

■ Easy maintenance and service by external PCB box

■ Three-speed centrifugal fan by wired or wireless remote controller



Rated conditions
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

Dimensions: mm



FLOOR/CEILING SLIM CONCEALED DUCT

FUR^{type}



■ Option

● Timer remote controller

● Wireless remote controller

● Simplified remote controller



RCS-TM80BG



RCS-BH80AG.WLB



RCS-KR1AGB

■ Ultra-slim profile: 190 mm for all models



■ Suitable for horizontal and vertical installation

■ Ideal for hotel application with very thin false-ceiling

■ Extremely silent: 26 dB-A at low speed (Class 7, 9, 12)

■ Anti-mould washable filters included

■ Easy maintenance and service by air suction port

■ Three-speed centrifugal fan by wired or wireless remote controller



Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in () for the external static pressure and operating sound are for use of booster cable.
Data subject to change without notice.

Dimensions: mm



UMR^{type}



■ Option

● Timer remote controller

● Wireless remote controller

● Simplified remote controller



RCS-TM80BG



RCS-BH80AG.WLB



RCS-KR1AGB

■ Integrated pump for condensate discharge

■ Fresh air intake

■ Reduced dimensions

■ Anti-mould and anti-bacteria washable filters

■ Three-speed centrifugal fan by remote control and feature to increase speed/pressure, using the booster cable



* The values in () for the external static pressure and operating sound are for use of booster cable.
Data subject to change without notice.



CONCEALED-DUCT HIGH-STATIC PRESSURE

DR^{type}



25~48 type



76, 96 type



DRY

Option

● Wired remote controller

● Wireless remote controller

● Simplified remote controller



RCS-TM80BG



RCS-BH80BG.WL



RCS-KR1AGB

● Rap valve kit

The types 76 and 96 require two rap valve kits for each unit.



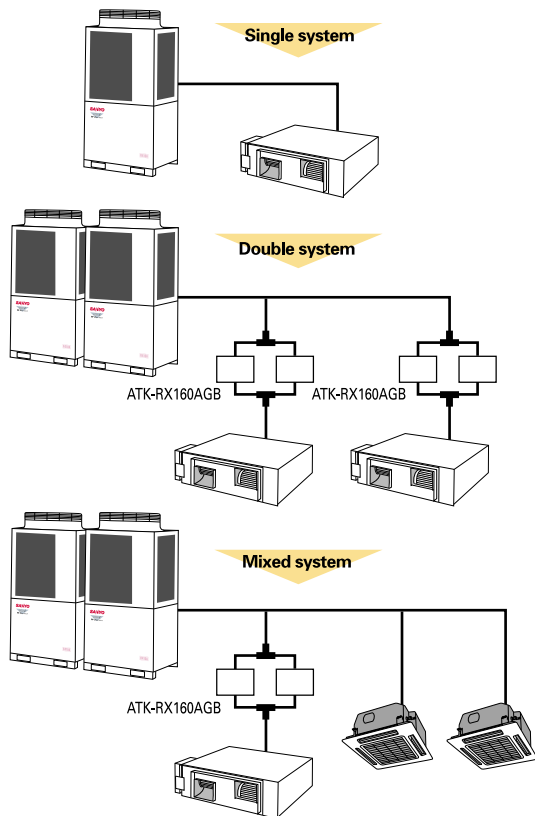
ATK-RX160AGB

High static pressure, low-noise design

Embedded ceiling type with high static pressure and excellent low operating sound features. As the discharge port also can be set freely, it is suitable for the office space.

Rap valve kit

Except for use as a single system, two rap valve kits are required for each unit for the type 76 and the type 96.



⬇ : Distribution joint kit (APR-RP160AG/APR-P160 for type 76)
(APR-RP680AG/APR-P680 for type 96)



● "Short duct" use of the type DR

When the type DR is used with a short duct (duct length of 4 to 5 m, external static pressure around 49 Pa (5 mm Aq)), the air volume and the operating sound maybe too large and an air volume adjustment damper or similar should be installed. (The external static pressure for this model is 147 Pa (15 mm Aq) or more.) In such a case, we recommend that you check use of the type UR.

Indoor units specifications

Model name (SPW-)		DR254GXH56B	DR364GXH56B	DR484GXH56B	DR764GXH56B	DR964GXH56B
Power source		220/230/240V, 1 phase-50, 60Hz				
Cooling capacity	kW	7.3	10.6	14.0	22.4	28.0
	BTU/h	25,000	36,000	47,800	76,400	95,500
Heating capacity	kW	8.0	11.4	16.0	25.0	31.5
	BTU/h	27,000	39,000	54,600	85,300	107,500
Power input	Cooling kW	0.480/0.505/0.530	0.520/0.545/0.570	0.600/0.660/0.710	0.870/0.900/0.930	1.270/1.330/1.390
	Heating kW	0.480/0.505/0.530	0.520/0.545/0.570	0.600/0.660/0.710	0.870/0.900/0.930	1.270/1.330/1.390
Running amperes	Cooling A	2.29/2.30/2.31	2.46/2.46/2.47	2.80/2.90/3.00	4.05/4.06/4.07	6.04/6.06/6.07
	Heating A	2.29/2.30/2.31	2.46/2.46/2.47	2.80/2.90/3.00	4.05/4.06/4.07	6.04/6.06/6.07
Fan motor	Type	Sirocco fan *1			Sirocco fan *2	
	Airflow rate (H/M/L) m ³ /min	23/22/21	30/28/25	36/35/33	56/53.1/49.6	72/70/66
	Output kW	0.2			0.2*2	0.4*2
	External static pressure Pa	186	176	167	176	216
Power sound level (H/M/L) dB(A)		55/54/53	56/55/53	58/57/55	59/58/57	62/61/60
Pressure sound level (H/M/L) dB(A)		44/43/42	45/44/42	47/46/44	48/47/46	51/50/49
Dimensions	Height mm	420			467	
	Width mm	1065			1428	
	Depth mm	620			1230	
Piping connections	Liquid (Flare) mm	9.52				
	Gas (Flare) mm	15.88			19.05	22.22
	Drain piping	VP-25				
Net weight kg		47	50	54	110	120

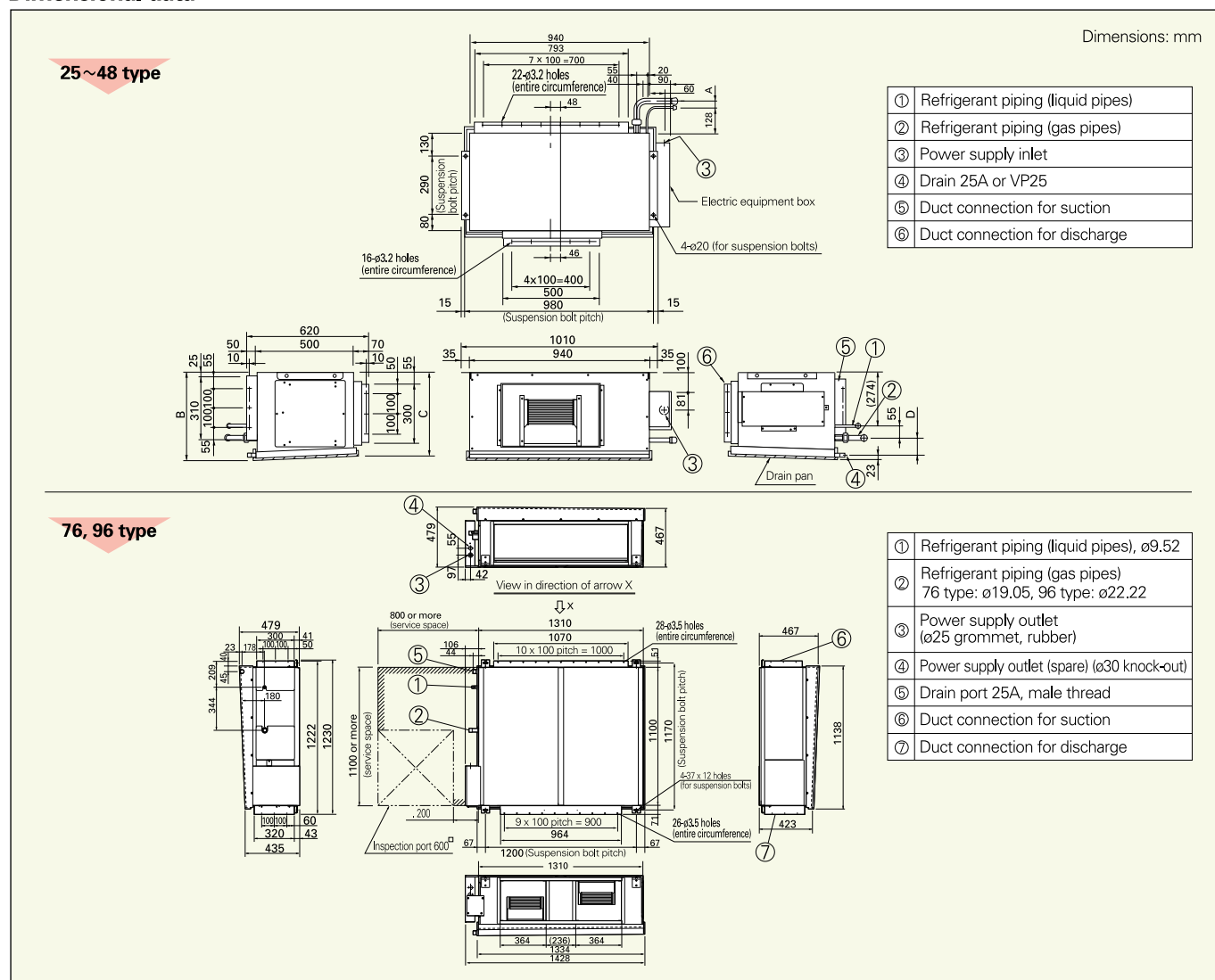
Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

Data subject to change without notice.

Dimensional data



CEILING MOUNTED UNITS

T
type



Option

- Wired remote controller
- Wireless remote controller
- Simplified remote controller



RCS-TM80BG



RCS-TRP80BG.WL

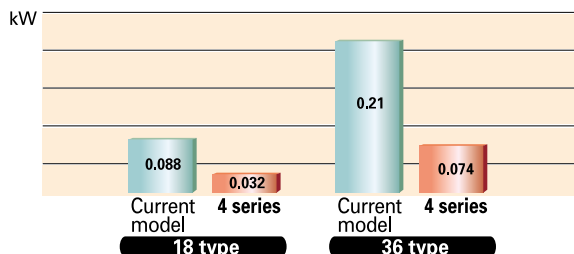
RCS-BH80BG.WL



RCS-KR1AGB

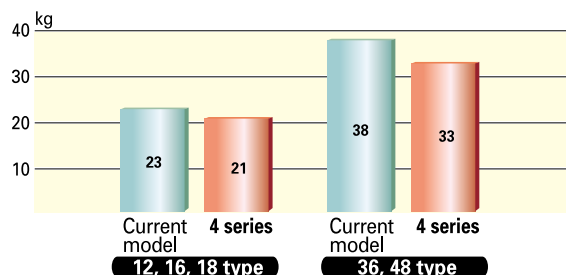
Newly developed DC fan motor with variable speed

Drastic reduction of the power input by adoption of a Sirocco fan with a new shape, a heat exchanger, etc.



Weight reduction for all models!

All models have light weight in the top class of the industry, and the installation work also have been improved. Body height and depth have been unified for all models, and functional design permits clean and good-looking installation also for several units.

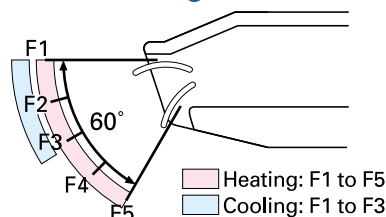


New design with lower operating sound

The operating sound has been reduced by max. 2 dB (A) by use of heat exchanger fins and Sirocco fans with a new shape and reduced wind path resistance.

Model	25 type	48 type
Operation noise (H/L)	38/33dB(A)	43/37dB(A)

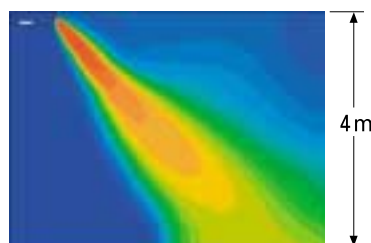
Realization of the most suitable air flow for heating and for cooling



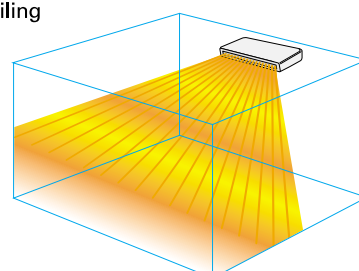
Automatic setting of the blowing angle according to heating or cooling. In case of swing operation, the flap moves automatically and smoothly in the range from F1 to F5, independent of the mode.

Further comfort improvement

The wide air discharge opening widens the air flow to the left and the right, so that a comfortable temperature is obtained in the entire room. The unpleasant feeling caused when the air flow directly hits the human body is prevented by the "Draft prevention position", which changes the swing width, so that the degree of comfort is increased.



Correspondence to ceiling heights up to 4 m



Indoor units specifications

Model name (SPW-)			T125XH	T165XH	T185XH	T255XH	T365XH	T485XH
Power source			220/230/240V, 1 phase-50, 60Hz					
Cooling capacity		kW	3.6	4.5	5.6	7.3	10.6	14.0
		BTU/h	12,000	15,000	19,000	25,000	36,000	47,800
Heating capacity		kW	4.2	5.0	6.3	8.0	11.4	16.0
		BTU/h	14,000	17,000	21,000	27,000	39,000	54,600
Power input	Cooling	kW	0.028/0.029/0.029		0.031/0.032/0.032	0.043/0.043/0.044	0.073/0.074/0.075	0.085/0.086/0.088
	Heating	kW	0.028/0.028/0.029		0.031/0.031/0.032	0.042/0.042/0.043	0.072/0.073/0.074	0.084/0.085/0.086
Running amperes	Cooling	A	0.26/0.24/0.23		0.28/0.26/0.24	0.38/0.35/0.33	0.62/0.57/0.53	0.69/0.63/0.60
	Heating	A	0.26/0.24/0.23		0.28/0.26/0.25	0.38/0.35/0.34	0.62/0.57/0.55	0.69/0.63/0.62
Fan motor	Type		Sirocco fan *2			Sirocco fan *3	Sirocco fan *4	
	Airflow rate (H/M/L)	m³/min	12/10/9	13/11/9		18.5/15/14	27.5/23/20	30/26/22
	Output	kW	0.03			0.04	0.08	
Power sound level (H/M/L)		dB(A)	46/43/41	47/44/41		49/47/44	52/49/46	54/51/48
Pressure sound level (H/M/L)		dB(A)	35/32/30	36/33/30		38/36/33	41/38/35	43/40/37
Dimensions	Height	mm	210					
	Width	mm	910			1180	1595	
	Depth	mm	680					
Piping connections	Liquid (Flare)	mm	6.35			9.52		
	Gas (Flare)	mm	12.7			15.88		
	Drain piping		VP-20					
Net weight		kg	21			25	33	

Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

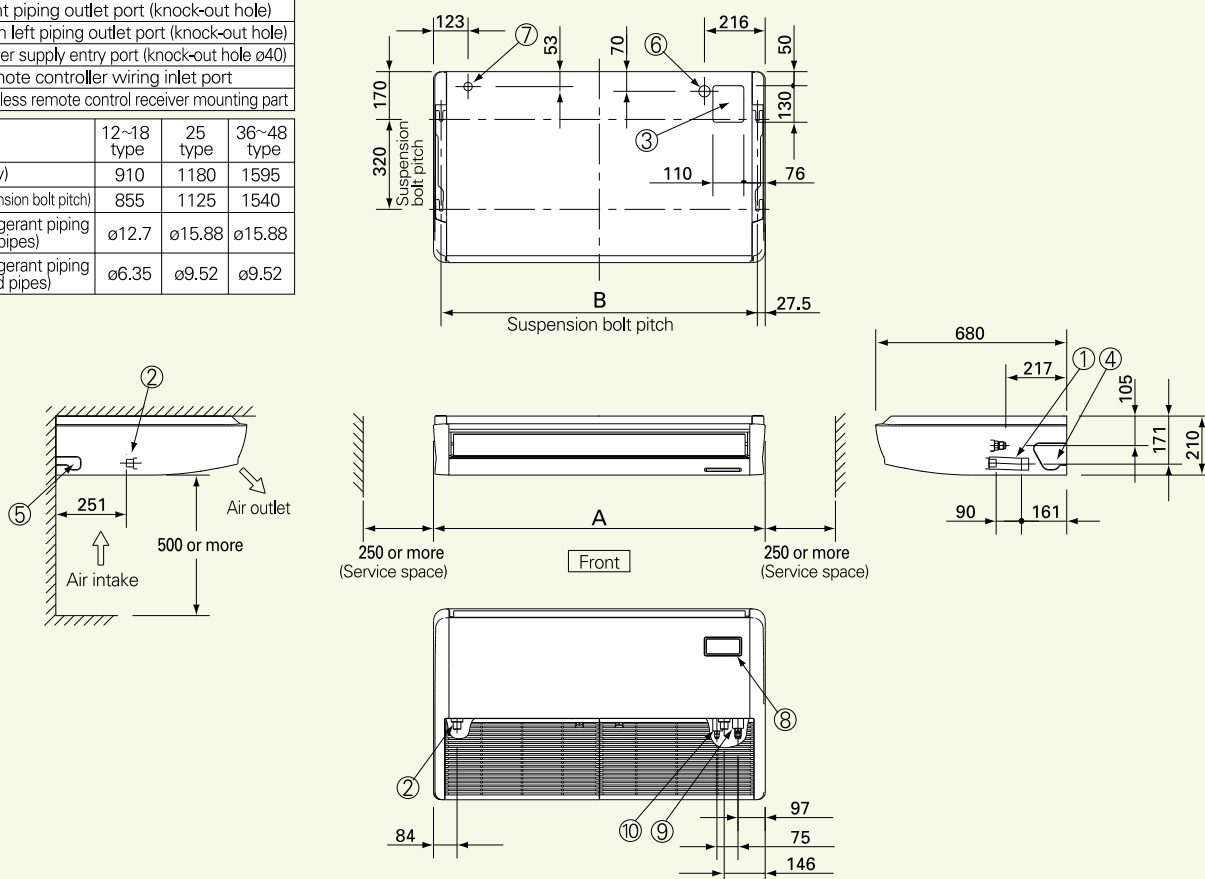
Data subject to change without notice.

Dimensional data

Dimensions: mm

- ① Drain port VP20 (inner ø26, hose accessory)
- ② Drain for left piping
- ③ Upper piping outlet port (knock-out hole)
- ④ Right piping outlet port (knock-out hole)
- ⑤ Drain left piping outlet port (knock-out hole)
- ⑥ Power supply entry port (knock-out hole ø40)
- ⑦ Remote controller wiring inlet port
- ⑧ Wireless remote control receiver mounting part

	12~18 type	25 type	36~48 type
A (body)	910	1180	1595
B (suspension bolt pitch)	855	1125	1540
⑨ Refrigerant piping (gas pipes)	ø12.7	ø15.88	ø15.88
⑩ Refrigerant piping (liquid pipes)	ø6.35	ø9.52	ø9.52



FLOOR/CEILING MOUNTED UNITS

FTR type



■ Option

- Timer remote controller
- Wireless remote controller
- Simplified remote controller



RCS-TM80BG



(Transmitter, common part)



RCS-TH80AG.WLB



RCS-BH80AG.WLB



RCS-KR1AGB

■ Three-speed centrifugal fan

■ Anti-mold and anti-bacteria washable filters

■ Ceiling Installation



■ Low operating sound

■ Horizontal flap swinging or set on a fixed position



Indoor units specifications

Model name (SPW-)			FTR74EXH56B	FTR94EXH56B	FTR124EXH56B	FTR164EXH56B	FTR184EXH56B	FTR224EXH56B
Power source			220/230/240V, 1 phase-50 Hz					
Cooling capacity		kW	2.2	2.8	3.6	4.5	5.6	6.4
		BTU/h	7,500	9,600	12,000	15,000	19,000	22,000
Heating capacity		kW	2.5	3.2	4.2	5.0	6.3	7.0
		BTU/h	8,500	11,000	14,000	17,000	21,000	24,000
Power input	Cooling	kW	0.65/0.65/0.65			0.88/0.88/0.88		
	Heating	kW	0.65/0.65/0.65			0.88/0.88/0.88		
Running amperes	Cooling	A	0.29/0.29/0.29			0.41/0.41/0.41		
	Heating	A	0.29/0.29/0.29			0.41/0.41/0.41		
Fan motor	Type	Sirocco fan						
	Airflow rate (H/M/L)	m³/min	10.5/9/7.5			12/10.8/9.7		15/13.5/12
	Output	kW	0.07			0.09		
Power sound level (H/M/L)		dB(A)	60/54/49			62/58/54		63/60/57
Pressure sound level (H/M/L)		dB(A)	49/43/38			51/47/43		52/49/46
Dimensions	Height	mm	680					
	Width	mm	900					
	Depth	mm	190					
Piping connections	Liquid (Flare)	mm	6.35 (1/4)					
	Gas (Flare)	mm	12.7 (1/2)					
	Drain piping		VP-26					
Net weight		kg	23.5					

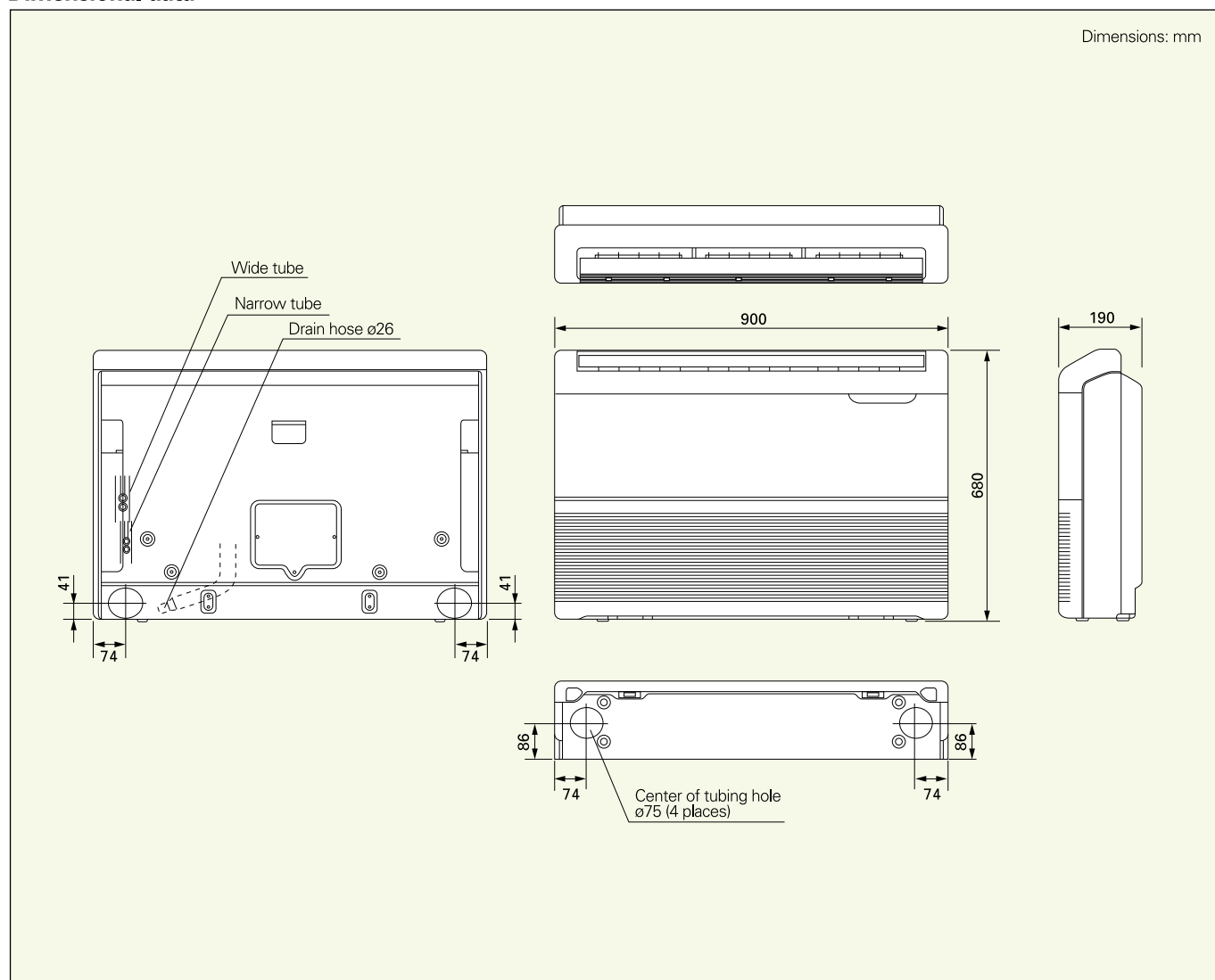
Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

Data subject to change without notice.

Dimensional data



WALL-MOUNTED UNITS

K type



Option

● Timer remote controller



RCS-TM80BG

● Wireless remote controller



RCS-SH1BG



RCS-BH80BG.WL

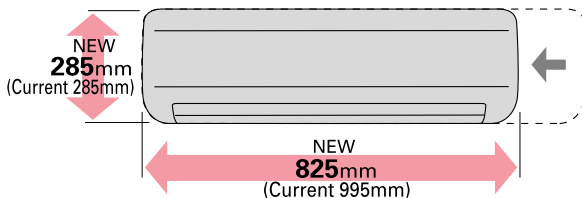
● Simplified remote controller



RCS-KR1AGB

Lighter and smaller units make the installation easy!

The width has been removed by approx. 17%, and light weight has been realized.



Silent design

Low operation sound in the top class of the industry has been realized, making these models most suitable for hotels and hospitals.

Flat & Intimate design

The compact design and flat face make match the interior, and installation without a sense of incongruity is possible even in a small space.

Closed discharge port

When operation is stopped, the flap closes completely to prevent entry of dust into the unit and to keep the equipment clean.

Washable front panel

The indoor unit's front panel can be easily removed and washed for trouble-free cleaning.



Piping outlet in three directions

Piping outlet is possible in the three directions of rear, right, and left, making the installation work easier.

Anti-mold filters are standard equipment.

IMPORTANT

When indoor unit are installed in a calm place where low noise is required such as hotel rooms, bed rooms or VIP rooms and so on, noise from Electronic Expansion Valve controlling refrigerant flow may be offensive to ear during cooling and heating operation.

In order to prevent the noise, please install optional External Electronic Expansion Valve Kit (ATK-SVRK56BG) at narrow tube 5 to 15m away from indoor unit.

Indoor units specifications

Model name (SPW-)		K075XH	K095XH	K125XH
Power source		220/230/240V, 1 phase-50, 60Hz		
Cooling capacity	kW	2.2	2.8	3.6
	BTU/h	7,500	9,600	12,000
Heating capacity	kW	2.5	3.2	4.2
	BTU/h	8,500	11,000	14,000
Power input	Cooling kW	0.018 / 0.019 / 0.019		0.021 / 0.022 / 0.023
	Heating kW	0.019 / 0.019 / 0.020		0.022 / 0.023 / 0.023
Running amperes	Cooling A	0.16 / 0.16 / 0.16		0.19 / 0.19 / 0.20
	Heating A	0.17 / 0.17 / 0.18		0.20 / 0.20 / 0.20
Fan motor	Type	Sirroco fan		
	Airflow rate (H/M/L) m³/min	9 / 7.5 / 6		10 / 8.5 / 6.5
	Output kW	0.047		
Power sound level (H/M/L) dB(A)		46 / 43 / 39		48 / 44 / 40
Pressure sound level (H/M/L) dB(A)		35 / 32 / 28		37 / 33 / 29
Dimensions	Height mm	285		
	Width mm	825		
	Depth mm	217		
Piping connections	Liquid (Flare) mm (in)	6.35 (1/4)		
	Gas (Flare) mm (in)	12.7 (1/2)		
	Drain piping	VP-13		
Net weight kg		10		

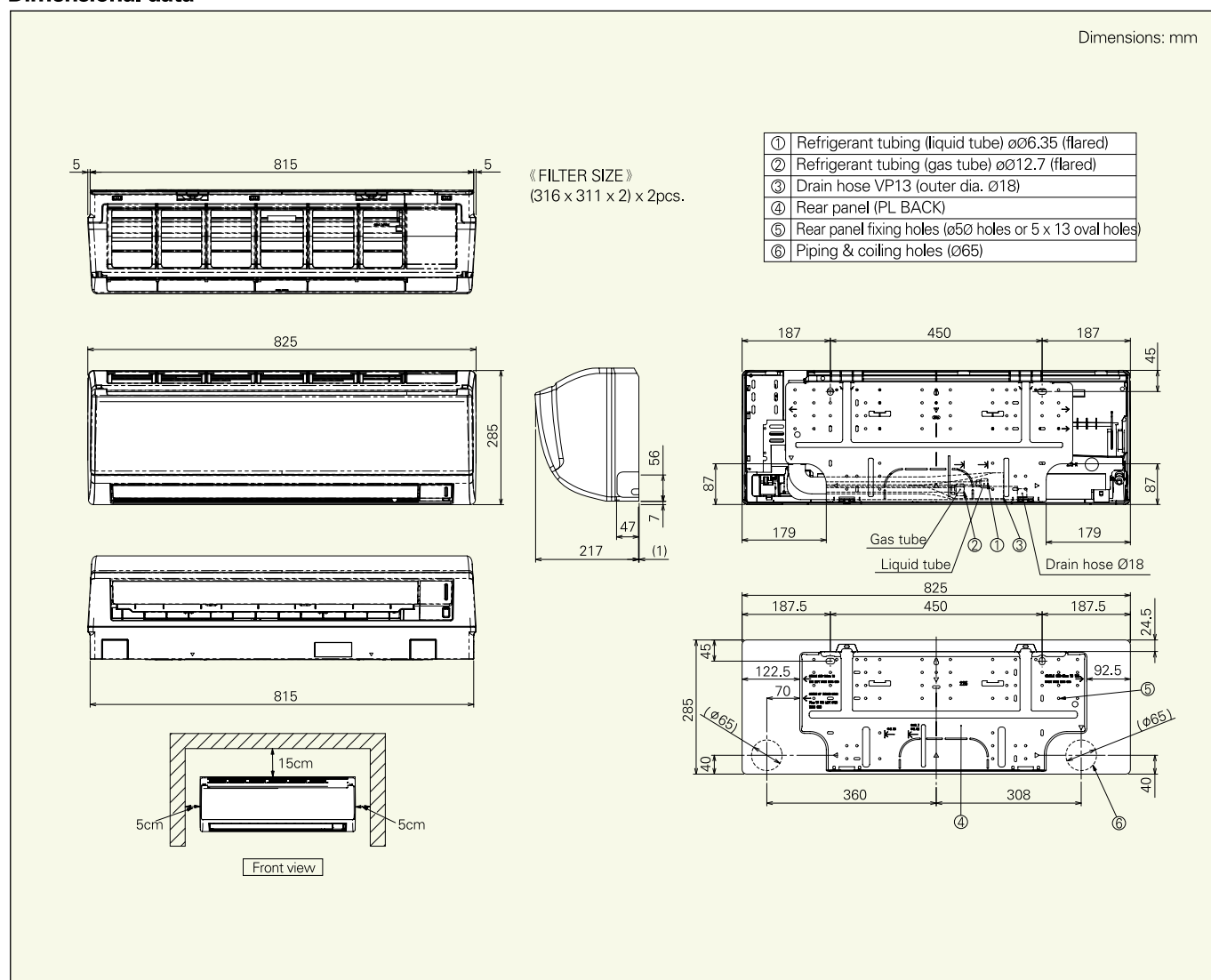
Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

Data subject to change without notice.

Dimensional data



WALL-MOUNTED UNITS

KR type



Option

● Wired remote controller

● Wireless remote controller

● Simplified remote controller



RCS-TM80BG



RCS-SH1BG



RCS-BH80BG.WL



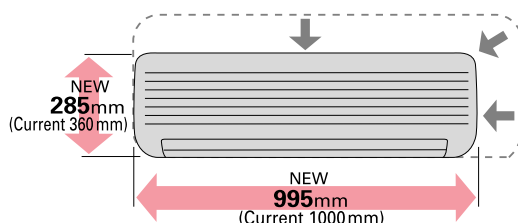
RCS-KR1AGB

■ Closed discharge port

When operation is stopped, the flap closes completely to prevent entry of dust into the unit and to keep the equipment clean.

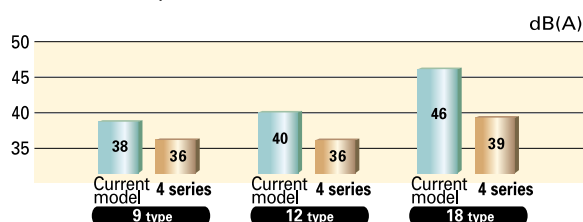
■ Lighter and smaller units make the installation easy!

The height has been removed by approx. 20%, and an extremely thin design has been realized.



■ Silent design

Low operation sound in the top class of the industry has been realized, making these models most suitable for hotels and hospitals.



■ Elegant color and round-shape design, adoption of horizontal stripes.

The compact design matches the interior, and installation without a sense of incongruity is possible even in a small space.

■ Washable front panel

The indoor unit's front panel can be easily removed and washed for trouble-free cleaning.



■ Piping outlet in three directions

Piping outlet is possible in the three directions of rear, right, and left, making the installation work easier.

■ Anti-mold filters are standard equipment.

IMPORTANT

When indoor unit are installed in a calm place where low noise is required such as hotel rooms, bed rooms or VIP rooms and so on, noise from Electronic Expansion Valve controlling refrigerant flow may be offensive to ear during cooling and heating operation.

In order to prevent the noise, please install optional External Electronic Expansion Valve Kit (ATK-SVRK56BG, ATK-SVRK160BG (with 254 type)) at narrow tube 5 to 15m away from indoor unit.

Rated conditions	Data subject to change without notice.
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB	
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB	

Dimensions: mm

25 type

- | | |
|---|---|
| ① | Liquid pipe ø9.52 (Length: Approx. 570 mm) |
| ② | Gas pipe ø15.88 (Length: Approx. 500 mm) |
| ③ | Drain hose VP13 (Length: Approx. 450 mm) |
| ④ | Installation fitting |
| ⑤ | Fitting fixing hole (ø5 hole or 5 x 13 slot) |
| ⑥ | Installation fitting piping, wiring inlet (ø80) |



CONCEALED FLOOR STANDING UNITS

FLOOR STANDING UNITS

FMR type



FR type



Option

●Wired remote controller

●Wireless remote controller

●Simplified remote controller



RCS-TM80BG



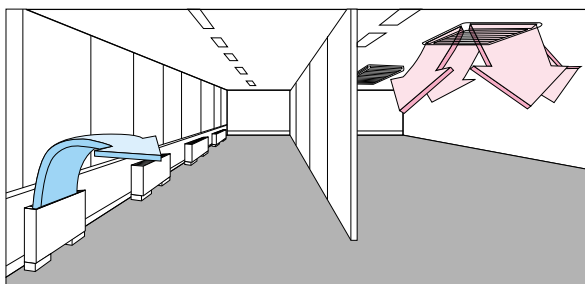
RCS-BH80BG.WL



RCS-KR1AGB

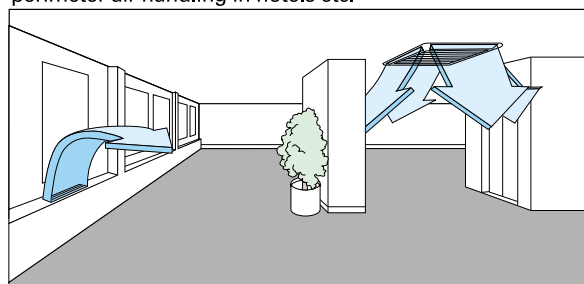
Effective perimeter handling is possible with simple work execution.

As indoor units of a multi-system, the perimeter zone is handled effectively.



Realization of perimeter air condition with high interior quality

Compact and effective air conditioning is performed with embedding in perimeter counters. Most suitable for perimeter air handling in hotels etc.



Large window space can be taken.

The simple external appearance and the streamlined layout make it possible to secure a large window space (unit height: 615 mm). Most suitable for perimeter air conditioning in hotels etc.



A wired remote controller can be installed in the body.



Indoor units specifications

Concealed Floor Standing type

Model name		(SPW-)	FMR74GXH56B	FMR94GXH56B	FMR124GXH56B	FMR164GXH56B	FMR184GXH56B	FMR254GXH56B
Power source			220/230/240V, 1 phase-50, 60Hz					
Cooling capacity		kW	2.2	2.8	3.6	4.5	5.6	7.1
		BTU/h	7,500	9,600	12,000	15,000	19,000	24,000
Heating capacity		kW	2.5	3.2	4.2	5.0	6.3	8.0
		BTU/h	8,500	11,000	14,000	17,000	21,000	27,000
Power input	Cooling	kW	0.051/0.056/0.061		0.079/0.085/0.091		0.116/0.126/0.136	
	Heating	kW	0.036/0.040/0.045		0.064/0.070/0.076		0.079/0.091/0.101	
Running amperes	Cooling	A	0.24/0.25/0.26		0.37/0.38/0.39		0.54/0.56/0.58	
	Heating	A	0.17/0.18/0.19		0.30/0.31/0.32		0.37/0.41/0.43	
Fan motor	Type		Sirocco fan *1			Sirocco fan *2		
	Airflow rate (H/M/L)	m³/min	7/6/5		9/7/6	12/9/8	15/13/11	17/14/12
	Output	kW	0.01		0.02	0.02	0.03	0.06
Power sound level (H/M/L)		dB(A)	44/41/39		50/46/40	49/46/42	49/46/42	52/49/46
Pressure sound level (H/M/L)		dB(A)	33/30/28		39/35/29	38/35/31	39/36/31	41/38/35
Dimensions	HxWxD	mm	616x904x229			616x1219x229		
Piping connections	Liquid (Flare)	mm	6.35					9.52
	Gas (Flare)	mm	12.7					15.88
	Drain piping		VP-20					
Net weight		kg	21			28		

Floor Standing type

Model name		(SPW-)	FR74GXH56B	FR94GXH56B	FR124GXH56B	FR164GXH56B	FR184GXH56B	FR254GXH56B
Power source			220/230/240V, 1 phase-50, 60Hz					
Cooling capacity		kW	2.2	2.8	3.6	4.5	5.6	7.1
		BTU/h	7,500	9,600	12,000	15,000	19,000	24,000
Heating capacity		kW	2.5	3.2	4.2	5.0	6.3	8.0
		BTU/h	8,500	11,000	14,000	17,000	21,000	27,000
Power input	Cooling	kW	0.051/0.056/0.061		0.079/0.085/0.091	0.116/0.126/0.136		0.150/0.160/0.170
	Heating	kW	0.036/0.040/0.045		0.064/0.070/0.076	0.079/0.091/0.101		0.110/0.120/0.130
Running amperes	Cooling	A	0.24/0.25/0.26		0.37/0.38/0.39	0.54/0.56/0.58		0.70/0.72/0.73
	Heating	A	0.17/0.18/0.19		0.30/0.31/0.32	0.37/0.41/0.43		0.52/0.54/0.56
Fan motor	Type		Sirocco fan *1			Sirocco fan *2		
	Airflow rate (H/M/L)	m³/min	7/6/5		9/7/6	12/9/8	15/13/11	17/14/12
	Output	kW	0.01		0.02	0.02	0.03	0.06
Power sound level (H/M/L)		dB(A)	44/41/39		50/46/40	49/46/42	50/47/42	52/49/46
Pressure sound level (H/M/L)		dB(A)	33/30/28		39/35/29	38/35/31	39/36/31	41/38/35
Dimensions	H×W×D	mm	615×1065×230			615×1380×230		
Piping connections	Liquid (Flare)	mm	6.35					9.52
	Gas (Flare)	mm	12.7					15.88
	Drain piping		VP-20					
Net weight		kg	29			39		

Rated conditions

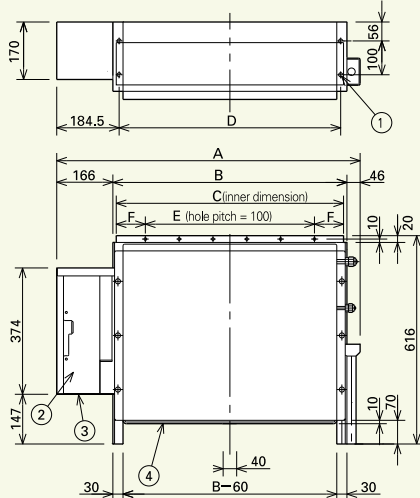
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

Data subject to change without notice.

Dimensional data

Concealed Floor Standing type

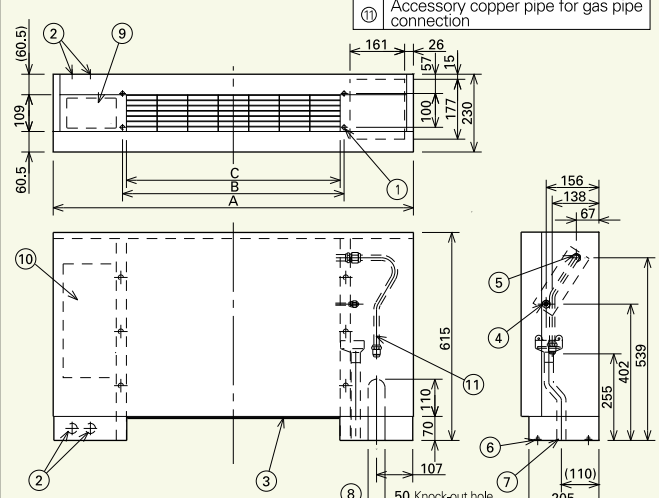
Indoor unit	A	B	C	D	E	F	Liquid pipes	Gas pipes
7~12 type	904	692	672	665	500	86	ø6.35	ø12.7
16 type								
18 type	1219	1007	1002	980	900	51	ø9.52	ø15.88
25 type								



- ① 4 x ø12 holes (for floor fixing)
- ② Electric equipment box
- ③ Power supply outlet
- ④ Air filter
- ⑤ Discharge duct connection flange
- ⑥ Refrigerant connection outlet (liquid pipes)
- ⑦ Refrigerant connection outlet (gas pipes)
- ⑧ Drain filter
- ⑨ Drain pan
- ⑩ Level adjustment bolt
- ⑪ Drain outlet VP20 (with vinyl hose)

Floor Standing type

Indoor unit	A	B	C	Liquid pipes	Gas pipes
7~12 type	1,065	665	632	ø6.35	ø12.7
16 type					
18 type	1380	980	947	ø9.52	ø15.88
25 type					



- ① 4 x ø12 holes (for floor fixing)
- ② Power supply outlet
- ③ Air filter
- ④ Refrigerant piping (liquid pipes)
- ⑤ Refrigerant piping (gas pipes)
- ⑥ Level adjustment bolt
- ⑦ Drain outlet VP20 (with vinyl hose)
- ⑧ Refrigerant piping connection port (bottom or rear)
- ⑨ Operation switch (remote controller RCS-SH80AG) mounting part
- ⑩ Electric equipment box
- ⑪ Accessory copper pipe for gas pipe connection

TOTAL HEAT EXCHANGER WITH DX COIL

GU type



Option

- Timer remote controller
- Wireless remote controller
- Simplified remote controller



RCS-TM80BG



RCS-BH80BG.WL



RCS-KR1AGB

■ **A powerful fresh air incoming to match the right temperature and humidity indoor condition in medium-sized commercial space**

■ **Integration of heat recovery ventilation and DX coil technology for optimum air temperature control**

■ **High efficiency on both temperature and humidity condition**

■ **Compact and quiet design**

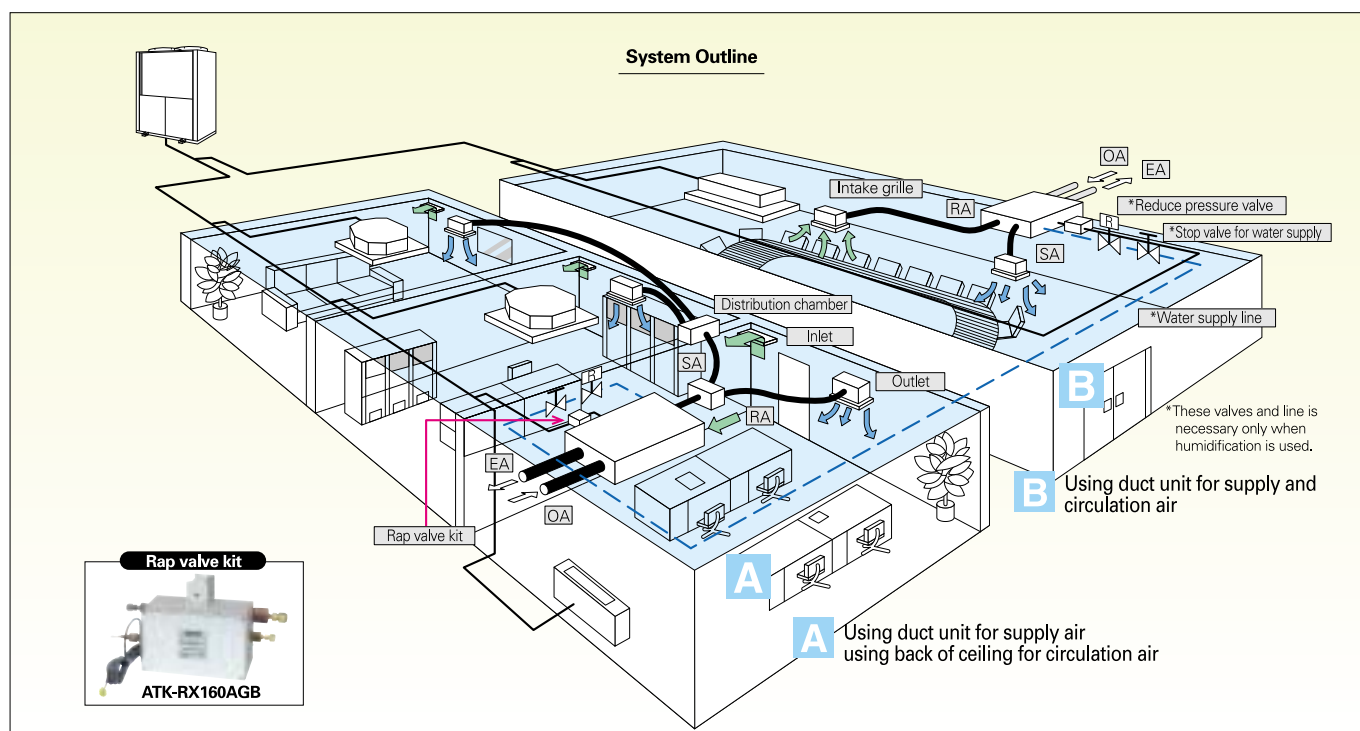
■ **High static pressure available**

■ **Standard spigots ensure simple connection to ductwork**

■ **Easy-to-clean filter prevent mould or bacteria from occurring**

■ **Easy maintenance and service by out installation of the electric box**

Rap valve kit "ATK-RX160AGB" is required for each unit.



Indoor units specifications

Model name		(SPW-)	GU055XH	GU075XH	GU105XH
Air circulation (H)		m³/h	500	750	1,000
Power source			220/230/240V, 1 phase-50Hz		
Fresh Air Load Treatment Capacity	Cooling	kW	5.3 (1.7)* ¹	8.2 (2.6)* ¹	10.7 (3.4)* ¹
	Heating	kW	6.5 (2.3)* ¹	9.8 (3.5)* ¹	12.6 (4.6)* ¹
Enthalpy Exchange Efficiency	Cooling	%	59		
	Heating	%	67		
Temp. Exchange Efficiency		%	75		
Equivalent cooling capacity	kW		3.6	5.6	7.3
	BTU/h		12,000	19,000	25,000
Power input	Cooling	kW	0.532/0.532/0.532	0.737/0.737/0.737	0.798/0.798/0.798
	Heating	kW	0.532/0.532/0.532	0.737/0.737/0.737	0.798/0.798/0.798
Running amperes	Cooling	A	2.5/2.4/2.3	3.4/3.2/3.1	3.7/3.5/3.4
	Heating	A	2.5/2.4/2.3	3.4/3.2/3.1	3.7/3.5/3.4
Fan motor	Type		Sirocco fan		
	External static pressure-Return air	Pa	183 (170)	221 (188)	135 (88)
	External static pressure-Supply air	Pa	205 (182)	264 (218)	176 (137)
	Output	kW	0.28 (4P)×2	0.35 (4P)×2	
Power sound level (C/H)		dB(A)	57 (Cooling), 58 (Heating)	58 (Cooling), 59 (Heating)	59 (Cooling), 60 (Heating)
Pressure sound level (C/H)		dB(A)	46 (Cooling), 47 (Heating)	47 (Cooling), 48 (Heating)	48 (Cooling), 49 (Heating)
Dimensions	Height	mm	425	450	
	Width	mm	1785	1903	
	Depth	mm	1000	1120	1220
Piping connections	Liquid (Flare)	mm	6.35 (1/4)		
	Gas (Flare)	mm	12.7 (1/2)		
	Drain piping		VP-25		
Connection Duct Diameter		mm	250		300
Net weight		kg	134	153	168

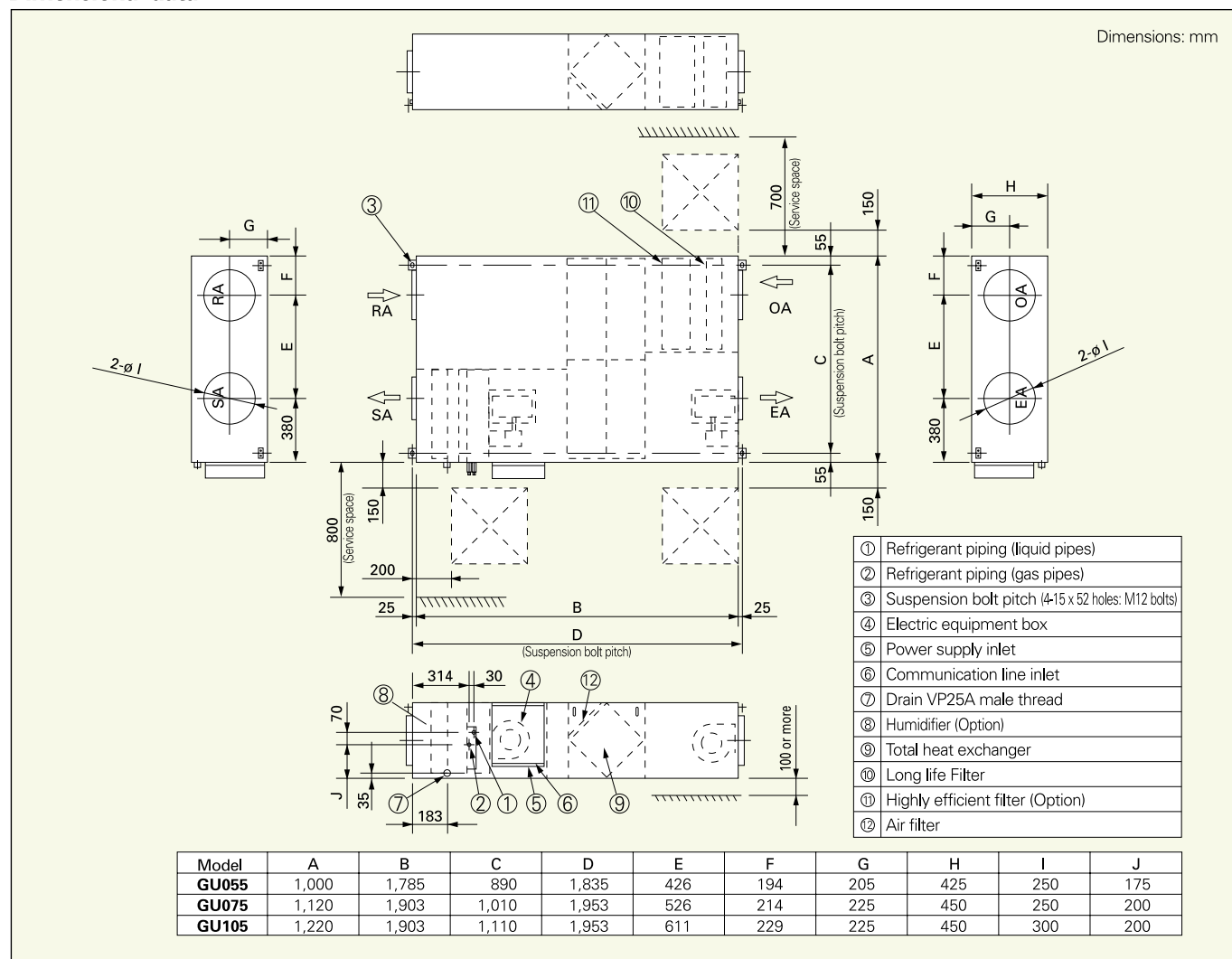
Rated conditions

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

* The values in () for the external static pressure and operating sound are for use of booster cable.





*1: Heat recovery capacity by heat exchanger.
Data subject to change without notice.

Dimensional data







Convenient system control

Sanyo control equipment meets the needs of various of customers.

Operation system		Individual control systems			Timer operation
Needs	Normal operation	Operation from each seat	Quick and easy operation	Daily and weekly program	
External appearance					
Type, model name	<div>Wired remote controller</div> <div>RCS-TM80BG</div>	<div>Wireless remote controller</div> <div>RCS-XM18BG.WL RCS-SH80BG.WL RCS-SS80BG.WL RCS-BH80BG.WL RCS-TRP80BG.WL RCS-SH1BG</div>	<div>Simplified remote controller</div> <div>RCS-KR1AGB</div>	<div>Schedule timer</div> <div>SHA-TM64AGB</div>	
Number of indoor units which can be controlled	1 group, 8 units	1 group, 8 units	1 group, 8 units	64 groups, max. 64 units	
Use limitations	●Up to 2 units can be connected per group.	●Up to 2 units can be connected per group.	●Up to 2 units can be connected per group.	●Power supply from the system controller ●When there is no system controller, connection is possible to the T10 terminal of an indoor unit.	
Connectable indoor unit	4 & 5 series indoor unit	4 & 5 series indoor unit	4 & 5 series indoor unit	4 & 5 series indoor unit	
Function	ON/OFF	○	○	○	—
	Mode setting	○	○	○	—
	Fan speed setting	○	○	○	—
	Temperature setting	○	○	○	—
	Air flow direction	○	○	○	—
	Permit/Prohibit switching	—	—	—	—
	Weekly program	○	—	—	○

*1 Select two of the following: "Fan speed", "Air flow direction", "Central/Individual", and "Filter sign".

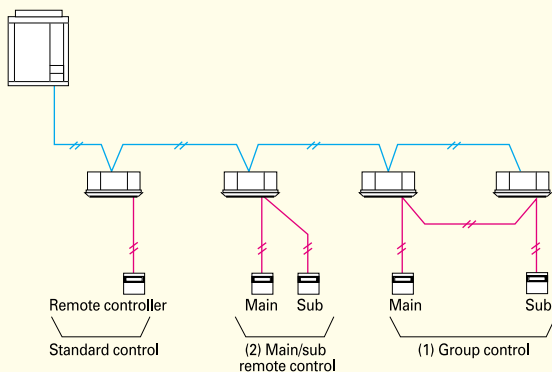
*2 Setting is not possible when a remote control unit is present. (Use the remote control for setting.)

Centralized control systems			
Operation with various function from center station	Only ON/OFF operation from center station	Simplified charge ratio for each tenant	
		Touch screen panel	Personal computer (field supply)
			
System controller SHA-KC64AGB	ON/OFF controller SHA-KC16KAGB	Intelligent controller SHA-KT256EG	Communication adaptor SHA-KA128AGB
64 groups, max. 64 units	16 groups, max. 64 units	64 units x 4 systems, max. 256 units	2 systems, max. 128 units
<ul style="list-style-type: none"> ● Up to 10 units, can be connected to one system. ● Main unit/sub unit (1 main unit + 1 sub unit) connection is possible. ● Use without remote controller is possible. 	<ul style="list-style-type: none"> ● Up to 8 units (4 main units + 4 sub units) can be connected to one system. ● Use without remote controller is impossible. 	<ul style="list-style-type: none"> ● A communication adaptor (SHA-KA128AGB) must be installed for three or more systems. 	
4 & 5 series indoor unit	4 & 5 series indoor unit	4 & 5 series indoor unit	4 & 5 series indoor unit
○	○	○	○
○	—	○	○
○	—	○	○
○	—	○	○
○*2	—	○*2	○*2
○	○	○	○
—	—	○	○

Convenient system control

Remote controller (Wired remote controller/Wireless remote controller)

● System example



Control contents	Part name, model No.	Quantity
Standard control <ul style="list-style-type: none"> ○ Control of the various operations of the indoor unit by wired or wireless remote controller. ○ Cooling or heating mode of the outdoor unit is decided by first-pressed priority of the remote controller. ○ Switching between remote controller sensor and body sensor is possible. 	<ul style="list-style-type: none"> ● Wired remote controller RCS-TM80BG ● Wireless remote controller RCS-XM18BG.WL RCS-SH80BG.WL RCS-SS80BG.WL RCS-BH80BG.WL RCS-TRP80BG.WL RCS-SH1BG 	1 unit each
(1) Group control <ul style="list-style-type: none"> ○ Batch remote control of all indoor units ○ Operation of all indoor units in the same mode ○ Up to 8 units can be connected. ○ The sensor is the body sensor, and thermostat ON/OFF setting in regard to the temperature set by the remote controller is possible for each indoor unit. 	<ul style="list-style-type: none"> ● Wired remote controller RCS-TM80BG 	1 unit
(2) Main/sub remote control <ul style="list-style-type: none"> ○ Max. 2 remote controllers per indoor unit. (Main remote controller and sub remote controller can be connected.) ○ The button pressed last has priority. ○ Timer setting is possible even with the sub remote controller. 	Main or sub <ul style="list-style-type: none"> ● Wired remote controller RCS-TM80BG ● Wireless remote controller RCS-XM18BG.WL RCS-SH80BG.WL RCS-SS80BG.WL RCS-BH80BG.WL RCS-TRP80BG.WL RCS-SH1BG 	As required

■ Wired remote controller (RCS-TM80BG)



● Basic remote controller ON/OFF

- Operation mode changeover (Cooling, Heating, Dry, Auto, Fan)
- Temperature setting (Cooling/Dry: 18-30 deg Heating: 16-30 deg)
- Air volume adjustment (HH, H, LL, Auto)
- Air flow direction adjustment

● Time Function

- 24 hours real time clock
- Day of the week indicator

● Weekly Program Function

- A maximum of 6 action can be programmed for each day.

● Outing Function

- This function can be prevent the room temperature from dropping or rising when the occupants are out for a long time.

● Sleeping Function

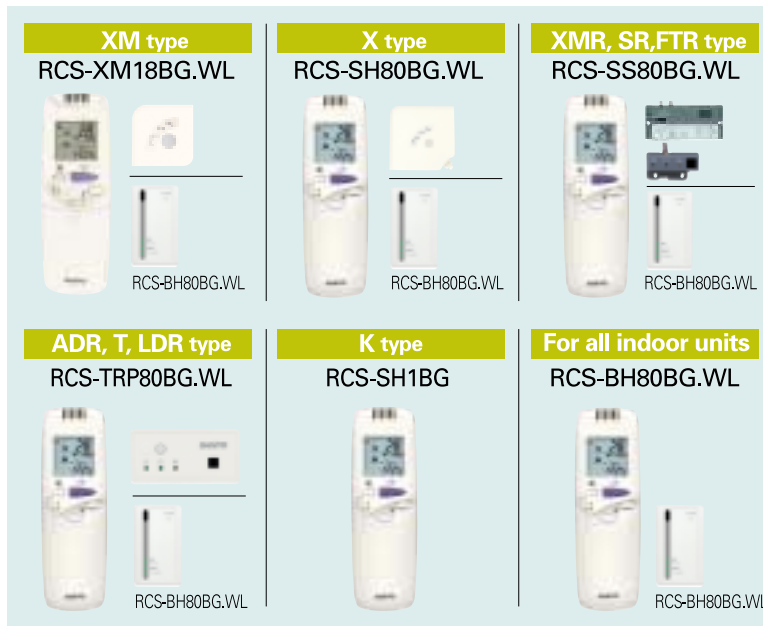
- This function controls the room temperature for comfortable sleeping.

● Max. 8 indoor units can be controlled from one remote controller.

● Remote control by main remote controller and sub controller is possible.

- Max. 2 remote controller (main remote controller and sub controller) can be installed for one indoor unit.

■ Wireless remote controller



● Ventilation independent operation is possible.

- When commercial ventilation fans or heat-exchange ventilation fans have been installed, they can be operated with this remote control (interlocked operation with the indoor unit or independent ventilation ON/OFF).

● Easy installation for the 4-way cassette type simply by replacing the corner part.

● 24 hours timer function

● Remote control by main remote controller and sub controller is possible.

- Max. 2 remote controller (main remote controller and sub controller) can be installed for one indoor unit.
Do not perform group control for 3 Series indoor unit and 4 Series indoor unit together.

● When RCS-BH80BG.WL is used, wireless control becomes possible for all indoor units.

- When a separate receiver is set up in a different room, control from that room also becomes possible.
- Automatic operation by means of the emergency operation button is possible even when the remote controller has been lost or the batteries have been exhausted.

● In addition, there are other functions like temperature setting, operation switching, wind direction/fan speed setting, etc.

■ Simplified remote controller (RCS-KR1AGB)



(Dimensions: H 120 x W 70 x D 16 mm)

● A remote controller with simple functions and basic operation.

- Suitable for open rooms or hotels where detailed functions are not required.
- ON/OFF, operation mode switching, temperature setting, wind velocity switching, wind direction setting, alarm display, and remote controller self-diagnosis can be performed.
- Batch group control for up to 8 indoor units.
- Remote control by main remote controller and sub controller is possible with a simplified remote controller or a wired remote controller. (up to two units.)

■ Schedule timer (SHA-TM64AGB)



(Dimensions: H 120 x W 120 x D 16 mm)

* As operation mode and temperature settings are not possible with the schedule timer, it must be used together with a remote controller, a system controller, an intelligent controller, etc. Also, as it does not have an address setting function, the control function of a system controller etc. must be used for address setting.

● Up to 64 groups (max. 64 indoor units) can be controlled divided into 8 timer groups.

● Six program operations (Operation/Stop/Local permission/Local prohibition) per day can be set in a program for one week.

- Only operation or stop, remote controller local permission or remote controller local prohibition, and their respective combinations are possible. (Operation + local permission, stop + local prohibition, only local permission, etc.)
- Local prohibition and the combination of the three items of temperature setting, mode change, and operation/stop can be set at the time of installation.

● A function for pausing the timer in case of national holidays has been added, and timer operation also can be stopped for a long time.

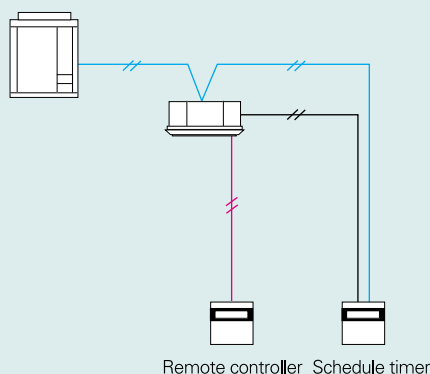
- By setting holidays or operation stop within one week, the timer can be paused just for that week.
- All timer settings can be stopped with the timer "ON/OFF effective" button. (Return to timer operation is made by pressing the button again.)

*The power supply for the schedule timer is taken from one of the following.

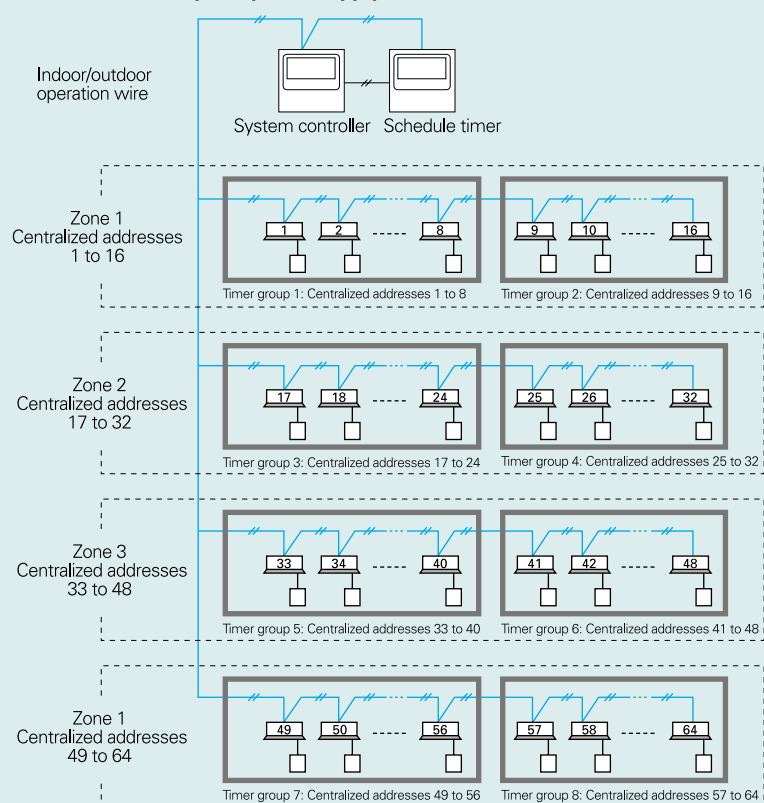
- 1 Control circuit board (T10) of a nearby indoor unit
(Power supply wiring length: Within 200 m from the indoor unit)
- 2 System controller
(Power supply wiring length: Within 100 m from the indoor unit)

*When the power supply for the schedule timer is taken from the control circuit board of the indoor unit, that indoor unit cannot be used with other control devices using the T10 terminal.

● Connection example 1 (power supply from the indoor unit)

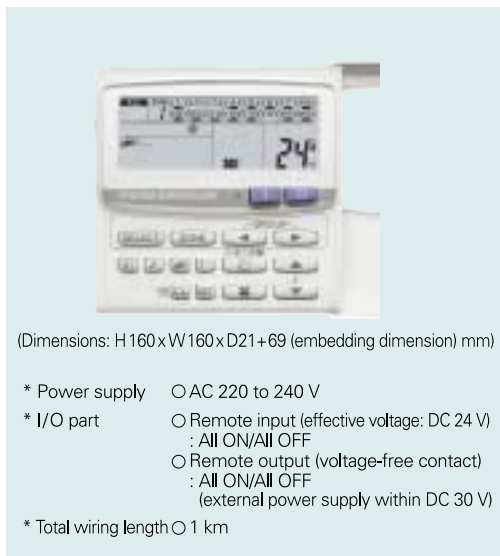


● Connection example 2 (power supply from the central controller)



Convenient system control

■ System controller (SHA-KC64AGB)



● Individual control is possible for max. 64 groups, 64 indoor units.

- Control of 64 indoor units divided into 4 zones. (One zone can have up to 16 groups, and one group can have up to 8 units.)
- Control is possible for ON/OFF, operation mode, fan speed, air flow direction (only when used without a remote controller), operation monitoring, alarm monitoring, ventilation, remote controller local operation prohibition, etc.

Individual	All operations are possible also from the remote controller. However, the contents will be changed to the contents of the controller operated last.
Central: 1	The remote controller cannot be used for ON/OFF. (All other operations are possible from the remote controller.)
Central: 2	The remote controller cannot be used for ON/OFF, mode change, and temperature setting. (All other operations are possible from the remote controller.)
Central: 3	The remote controller cannot be used for mode change or temperature setting change. (All other operations are possible from the remote controller.)
Central: 4	The remote controller cannot be used for operation mode change. (All other operations are possible from the remote controller.)

● A control mode corresponding to the use condition can be selected from 10 patterns.

① Operation mode: Central control mode or remote control mode can be selected.

- Central control mode: The system controller is used as centralized control device. (Setting from a remote controller can be prohibited by prohibiting local operation from the system controller.)
- Remote control mode: The system controller is used as a remote controller. (Setting from the system controller can be prohibited by prohibiting local operation from another central control unit.)

② Controlled unit number mode: All mode or zone 1, 2, 3, 4 mode can be selected.

- All mode: All, zone, or group unit can be selected.
- Zone 1, 2, 3, 4 mode: Setting is possible only for the indoor units of zone 1, 2, 3, or 4.

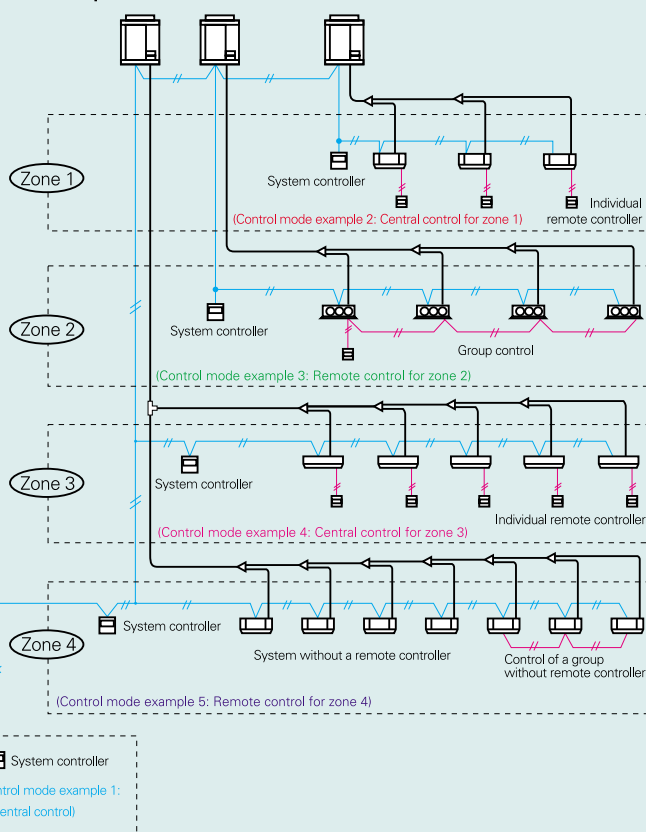
		① Operation mode	
		Central control mode	Remote control mode
② Controlled unit number mode	All mode	All central control *Example 1	All remote control
	Zone 1 mode	Zone 1 central control *Example 2	Zone 1 remote control
	Zone 2 mode	Zone 2 central control	Zone 2 remote control *Example 3
	Zone 3 mode	Zone 3 central control *Example 4	Zone 3 remote control
	Zone 4 mode	Zone 4 central control	Zone 4 remote control *Example 5

● Joint use with a remote controller, an intelligent controller, a schedule timer, etc. is possible.

(The maximum number of connectable system controllers is 10, including other central controllers on the same circuit.)
(In case of joint use with a wireless remote controller, there are limitations for the control mode. Please use only with "Individual" and "Central 1".)

● Control of systems without a remote controller and of main/sub systems (a total of up to two units) is possible.

● Connection example



Intelligent controller (SHA-KT256EG)

Touch panel



(Dimensions: H 240 x W 280 x D 138 mm)

- *Power supply ○ AC 100 to 240 V (50 Hz), 20 W (separate power supply)
- *I/O part ○ Remote input (voltage-free contact): All on/off
- Remote output (voltage-free contact): All ON, All alarm (external power supply within DC 30 V)
- *Total wiring length ○ 1 km for each system
- * Only for embedding in the panel

Web application



*Display sample

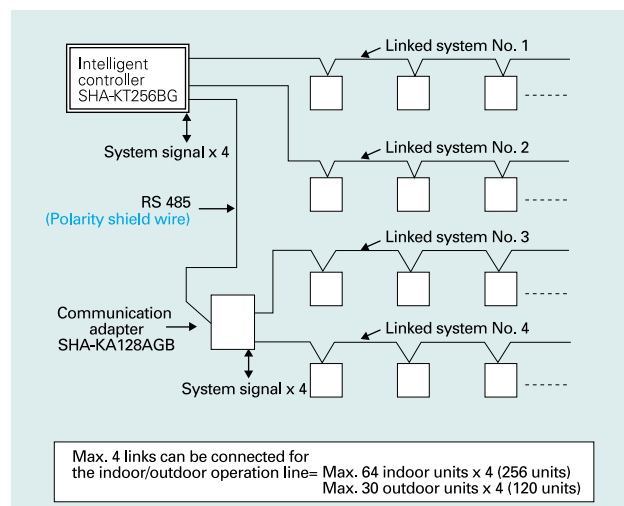
- Max. 256 indoor units (4 systems x 64 units) can be controlled. In case of three or more systems, a communication adapter SHA-KA128AG must be installed on the outside.
- Operation is possible as batch, in zone units, in tenant units, and in group units.
- ON/OFF, operation mode setting, temperature setting, for speed setting, air flow direction setting (when used without a remote controller), and remote controller local operation prohibition (prohibition 1, 2, 3, 4) can be done.
- A system without a remote controller is possible. Joint use with a remote controller or a system controller etc. also is possible.
- Use of a schedule timer and holiday setting also can be done.
- Proportional distribution of the air-conditioning energy is possible.
- Input pulse signal from Electric or Gas consumption meter.

* In case of joint use with a wireless remote control system, there are limitations for the control mode. Please use only with "Permission" and "Prohibition 1".

- Limitation contents for prohibited operation
Prohibition means limitation of the operation contents from the remote controller. It is also possible to change the prohibition items.

	Limitation contents
Individual	There is no limitation for the operation of the remote controller. However, the contents will be changed to the contents of the controller operated last. (Last-pressed priority)
Prohibition: 1	The remote controller cannot be used for ON/OFF. (All other operations are possible from the remote controller.)
Prohibition: 2	The remote controller cannot be used for ON/OFF, operation mode change, and temperature setting. (All other operations are possible from the remote controller.)
Prohibition: 3	The remote controller cannot be used for operation mode change and temperature setting. (All other operations are possible from the remote controller.)
Prohibition: 4	The remote controller cannot be used for operation mode change. (All other operations are possible from the remote controller.)

Note: Avoid joint use of the AMY system and the intelligent controller on the same indoor/outdoor operation line.



Communication adaptor (SHA-KA128AGB)



(Dimensions: H 260 x W 200 x D 68 mm)

* Power supply: AC 100 to 240 V (50 Hz), 3 W (separate power supply)

- Required to connect three or more linked wiring systems (indoor/outdoor operation lines) to the intelligent controller .
- Also required for connection of the AMY software.
* For more detail, please take a look at page 58.
- Two linked wiring systems can be connected to one SHA-KA128AG, but max. 4 systems can be connected for the entire intelligent controllers.
* As this is not a splash-proof design, it must be installed indoors or in the control panel etc.

Convenient system control

■ ON/OFF controller (SHA-KC16KAGB)



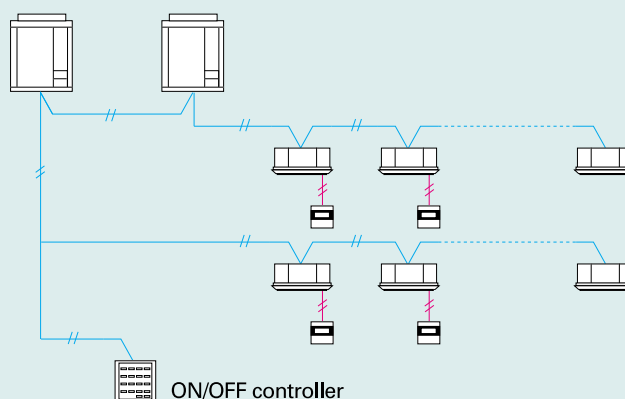
(Dimensions: H 160 x W 160 x D 14 + 69 (embedding dimension) mm)

- *Power supply ○ AC 220 to 240 V
- *I/O part ○ Remote input (effective voltage: within DC 24V) : All ON/OFF
- Remote output (allowable voltage: within DC 30V) : All ON, All alarm

- 16 groups of indoor units can be controlled.
- Collective control and individual group (unit) control can also be performed.
- Up to 8 ON/OFF controller (4 main, 4 sub) can be installed in one link system.
- The operation status can be determined immediately.

*As operation mode and temperature settings are not possible with the ON/OFF controller, it must be used together with a remote controller a system controller etc.

■ System example

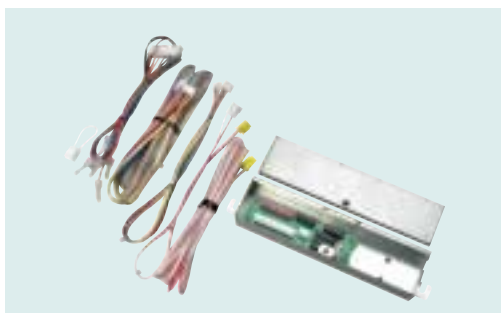


■ Remote sensor (ART-K45AGB)



- This is a remote sensor which can be used with 4 series indoor unit. Please use it to detect the room temperature when no remote controller sensor or body sensor is used. (Correspondence to a system without a remote controller is possible.)
- For joint use with a remote control switch, use the remote control switch as main remote controller.

■ Signal output board (ACC-SG-AGB)



- Defrost, heating, cooling and thermostat ON signal can be put out to the outside.
- Signal type (2 types): Voltage specification, non-voltage specification

■ Seri-Para I/O Unit for indoor unit (ACC-SP16TAG)



Input

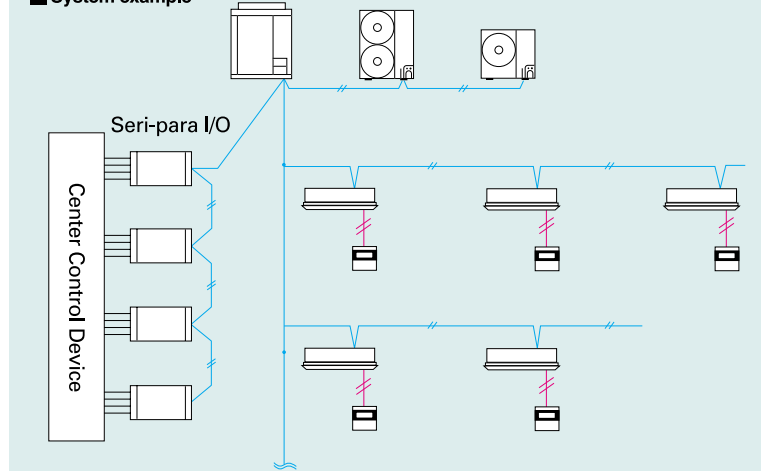
1. On/Off (Pulse DC24V)
2. Local prohibit (Continuous DC24V)
3. Temp setting (Analog DC1~5V)
4. All On/Off (Pulse DC24V)
5. All local prohibit & Emergency stop (Continuous DC24V)

Output

1. On/Alarm/Answer back/Filter sign
2. Room temp (Analog DC4~20mA)
3. All On/Off

- This unit can control up to 4 outdoor units.
- From the center control device, mode changing and batch operation/batch stop are possible.
- This unit can control and monitor the status up to 16 groups of indoor units (Max 64 indoor units).
- Up to 4 seri-para units can be connected in one system.
- From the center control device, it is possible to set the temperature and to monitor the room temperature or intake air temperature.

■ System example



■ LonWorks Interface (SHA-LN16UGB)



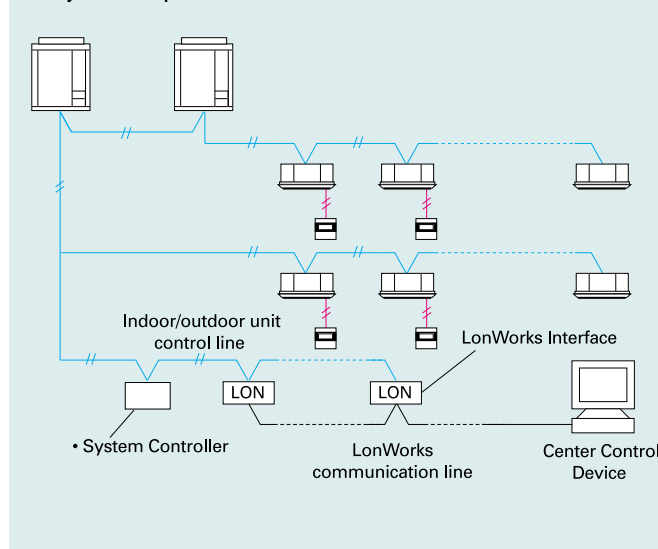
- This interface is a communications converter for connecting LonWorks to the Sanyo air conditioner unit (PAC • GHP) control network.
- From the host connected to LonWorks, basic settings and status monitoring is possible for up to 16 groups of A/C units.

FUNCTIONS

A/C unit settings from the LonWorks communicator	Settings for each group of indoor units	Start/stop
	Settings for all units	Temp. setting
A/C unit status notifications made to the LonWorks communicator		Operation mode
		Option 1 settings(*)
		Option 2 settings(*)
		Emergency stop
		Start/stop
		Temp setting
		Operation mode
		Option 1 settings(*)
Configuration properties		Option 2 settings(*)
		Alarm status
		Indoor units with active alarms
		Room temp.
		A/C unit status
		Transmission intervals settings
		Minimum time secured for transmission

* Select two of the following: remote controller prohibit, fan speed setting, air direction setting, filter sign reset.

■ System example



Convenient system control

■ Seri-Para I/O unit for outdoor unit (ACC-XSP4U1GB)

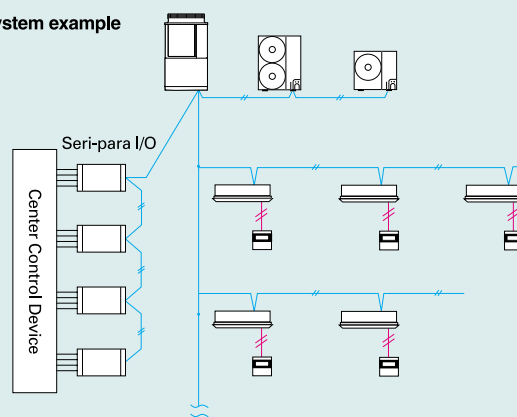


(Dimensions: H 80 x W 290 x D 260 mm)

- *Power supply ○ Single phase 100/200 V (50/60 Hz), 18 W
- *Input
 - Batch operation/Batch stop (non-voltage contact/DC 24 V, pulse signal)
 - Cooling/Heating (non-voltage contact/static signal)
 - Demand 1/2 (non-voltage contact/static signal) (Local stop by switching)
- *Output
 - Operation output (non-voltage contact)
 - Alarm output (non-voltage contact)
- *Wiring length
 - Indoor/Outdoor operation lines: Total length 1 km
 - Digital signal: 100 m or shorter

- This unit can control up to 4 outdoor units.
- From the center control device, mode changing and batch operation/batch stop are possible.
- Required for demand control.

■ System example

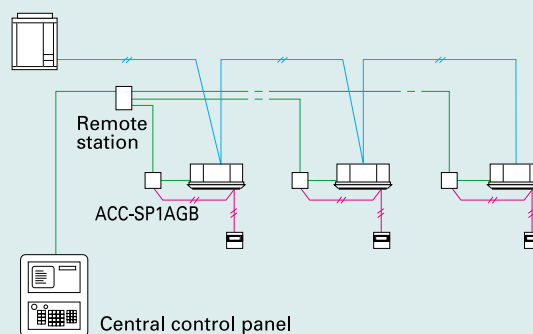


■ MINI Seri-Para I/O Unit (ACC-SP1AGB)



- Control and status monitoring is possible for individual indoor unit (1 group).
- In addition to operation and stop, there is a digital input function for air speed and operation mode.
- Temperature setting and measuring of the indoor suction temperature can be performed from central monitoring.
- The analog input for temperature setting is 0 to 10 V.
- Power is supplied from the T10 terminal of the indoor unit. Separate power supply also is possible (in case of suction temperature measuring).

■ System example

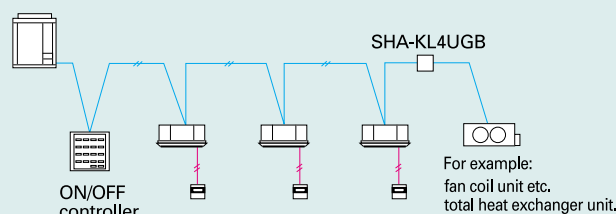


■ Local adaptor for ON/OFF control (SHA-KL4UGB)



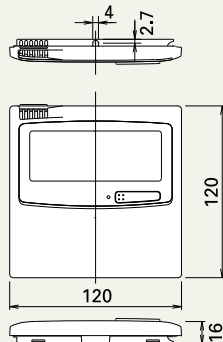
- Control and status monitoring is possible for individual indoor unit by contact signal.

■ System example

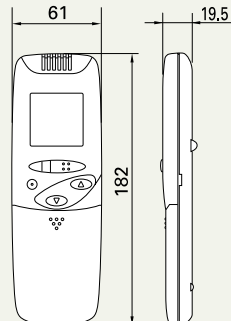


Control equipment external appearance drawings

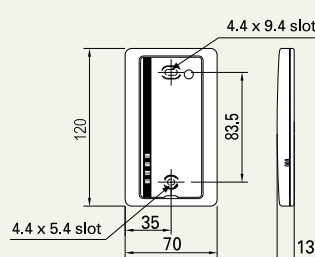
●Wired remote controller
(RCS-TM80BG)



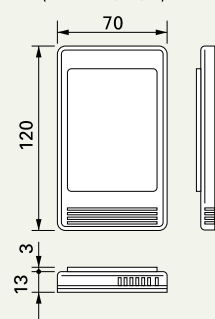
●Wireless remote controller



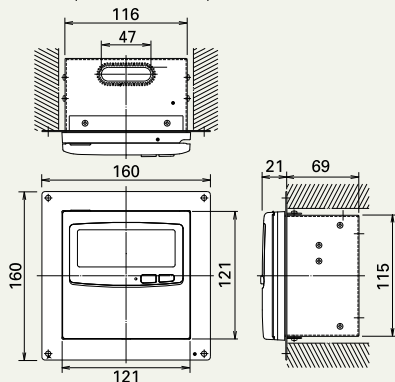
●Separate receiver for wireless remote controller



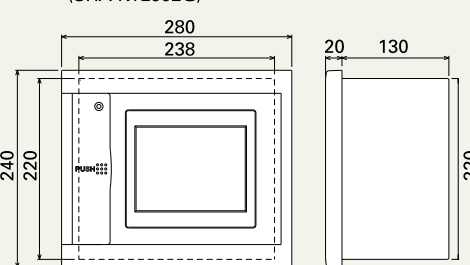
●Simplified remote controller
(RCS-KR1AGB)
●Remote sensor
(ART-K45AGB)



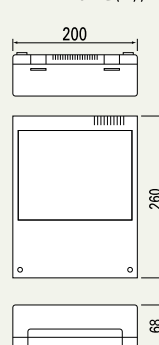
●System controller
(SHA-KC64AGB)



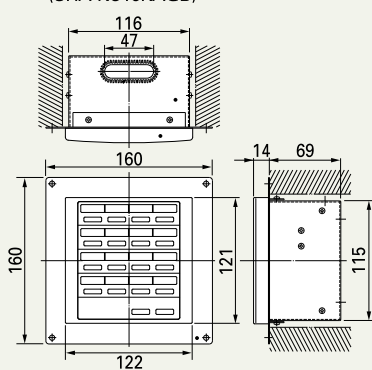
●Intelligent controller
(SHA-KT256EG)



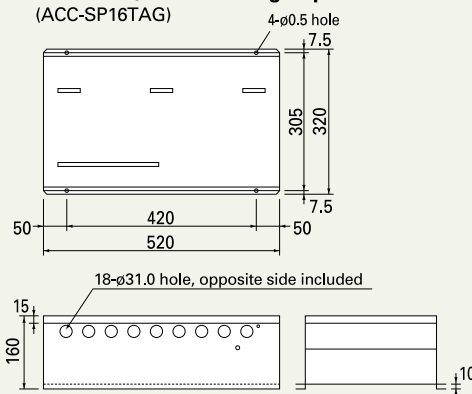
●Communication adapter
(SHA-KA128AG(B))



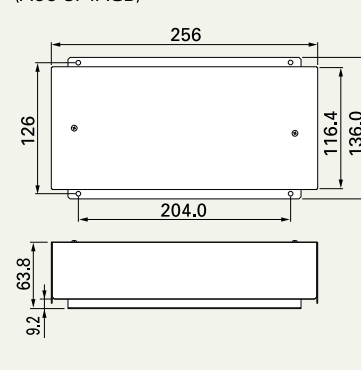
●ON/OFF controller
(SHA-KC16KAGB)



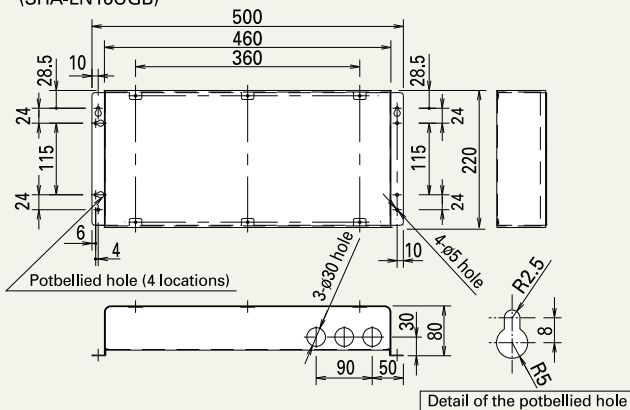
●Seri-Para I/O unit for 16 groups indoor unit
(ACC-SP16TAG)



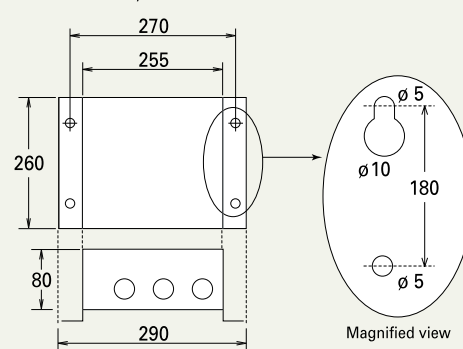
●Seri-Para I/O unit for each indoor unit
(ACC-SP1AGB)



●LonWorks interface
(SHA-LN16UGB)



●Seri-Para I/O unit for outdoor unit
(ACC-XSP4U1GB)



MINI ECO-i

2WAY ECO-i 5N series

3WAY ECO-i

INDOOR UNITS

OPTIONAL PARTS

STAIMS Basic software / TECS-5000

~ Up to 1024 indoor units can be controlled by one PC ~

Functions of basic software

- Standard remote control for all indoor units
- Many timer schedule programs can be set on the calendar
- Detailed information display for alarms
- CSV file output with alarm history, operating status.
- Automatic data backup to HDD



With 4 upgrade packages the basic software can be upgraded to suit individual requirements

STAIMS optional software

TECS-5000A for Load distribution

~ Load distribution calculation for each tenant ~

- Air-conditioner load distribution ratio is calculated for each unit (tenant) with used energy consumption data (m³, kWh).
- Calculated data is stored with CSV type file.
- Data of last 365 days is stored



STAIMS optional software

TECS-5000G for Object layout display

~ Whole system can be controlled visually ~

- Operating status monitor is available on the layout display.
- Object's layout and indoor unit's location can be checked at once.
- Each unit can be controlled by virtual remote controller on the display.
- Max. 4 layout screens are shown at once.

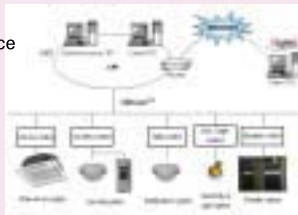


STAIMS optional software

TECS-5000B for BACnet interface

~ Connectable to BMS system ~

- Can communicate with other equipment by BACnet protocol.
- SANYO air conditioners system can be controlled by both BMS and STAIMS.
- Max. 256 indoor units can be connected to 1 PC (that has STAIMS basic & BACnet software).



STAIMS optional software

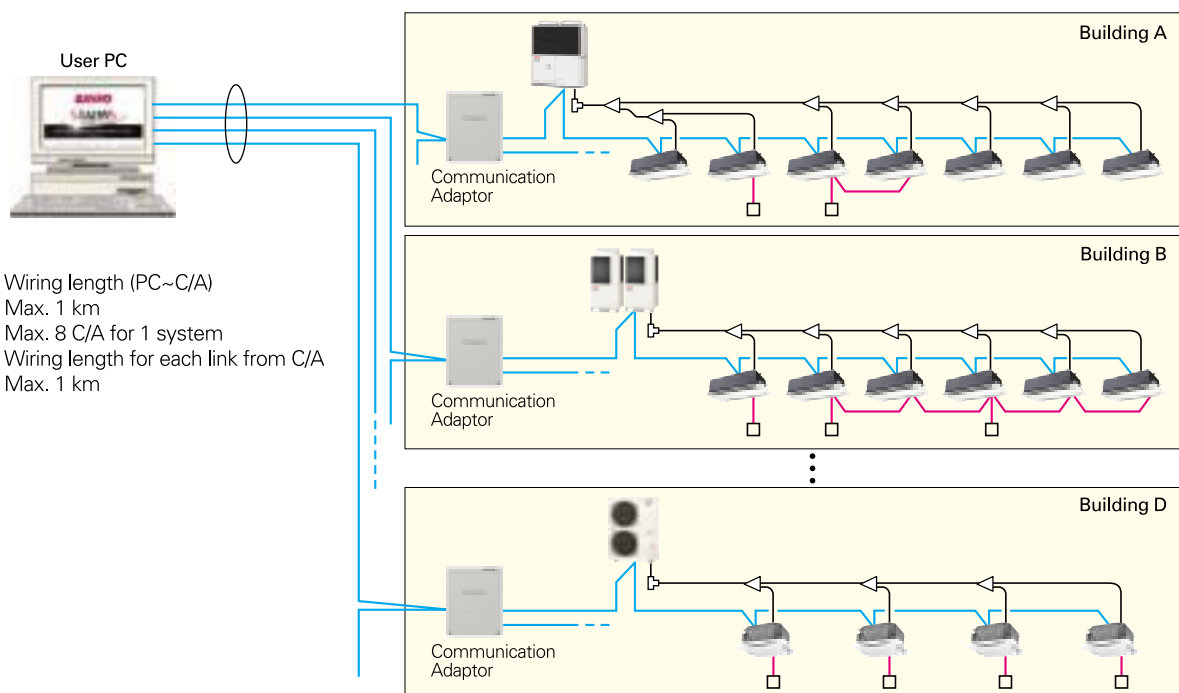
TECS-5000W for Web application

~ Web access & control from remote station ~

- Accessing STAIMS software from remote PC.
- You can monitor/operate SANYO system by using Web browser (Internet Explorer).



"STAIMS" suits for Large shopping center, University that has many area/buildings. 1 "STAIMS" PC can have 4 independent systems at once. Each system can have max. 8 C/A units, and control max. 512 units. In total, 1024 indoor units can be controlled by 1 "STAIMS" PC.



- Wiring length (PC~C/A)
Max. 1 km
- Max. 8 C/A for 1 system
- Wiring length for each link from C/A
Max. 1 km

In regard to CFC regulations and substitute refrigerant (HFC-type refrigerant R407C, R410A)

Since depletion of the ozone layer from CFC refrigerant (R11, R12, etc.) has become a global issue, an Ozone Layer Protection Law was enacted in 1988. Accordingly, CFC refrigerant production was globally terminated in 1995. Since HCFC22 refrigerant contains chlorine, its production is also regulated and will be terminated by 2020. The HFC-type refrigerants R407C and R410A both cause no harm to the ozone layer, and it is expected that they will be safe substitute refrigerants.

New refrigerants

The new refrigerant R407 is a non-azeotropic refrigerant mixture of three types (R32, R125, and R134a), and R410A is a pseudo-azeotropic refrigerant mixture of two types (R32, R125). Both do not contain chlorine (ozone layer depletion potential = 0).

	Refrigerant		Ingredients	Refrigerant ratio (wt%)	Ozone layer depletion potential	Combustibility
New refrigerant	HFC (Hydro Fluoro Carbon)	R407C	HFC32/HFC125/HFC134a	23/25/52	0	None
		R410A	HFC32/HFC125	50/50		
Conventional refrigerant	HCFC (Hydro Chloro Fluoro Carbon)	R22	HCFC22	100	0.05	None

Precaution for the installation work

R407C, R410A applies higher pressure than R22 and uses refrigeration oil different from R22. Therefore, piping works and tools are also different from those for R22 refrigerants.

Refrigerant	Conventional refrigerant	New refrigerant	
	R22 (single refrigerant)	R407C (refrigerant mixture)	R410A (refrigerant mixture)
Refrigeration oil	Mineral oil (Suniso)	Synthetic (ether) oil	Synthetic (ether) oil
Condensing pressure (at a condensation temperature of 50°C)	1.9MPa(100%)	2.1MPa(110%)	3.1MPa(160%)

Additional Refrigerant Charge

- Additional refrigerant charge amount is calculated from the narrow tubing total length as follows.

Tools specifically

- Please note that tools for new refrigerants R407C and R410A are different from those for R22.

Compatibility of representative tools for the installation

No	Equipment name	Application	Compatibility	
			R407C	R410A
1	Gauge manifold charging hose	Vacuum drying, refrigerant additional charging	Only for R407C	Only for R410A
2	Vacuum pump	Vacuum drying (Use is possible when a reverse-flow prevention adapter is attached.)	Joint use with R22	Joint use with R22
3	Reverse-flow prevention vacuum pump adapter	Must be used for vacuum drying.	Joint use with R22	Joint use with R22 (Use the accessory adapter.)
4	Weighting scale for refrigerant charging	Measuring the refrigerant charging	Joint use with R22	Joint use with R22
5	Torque wrench	For tightening of flare nuts	Joint use with R22	Only for R410A (1/2, 5/8)
6	Flaring tool (clutch type)	Piping flare processing	Joint use with R22 (A specialized version also exists.)	Joint use with R22 (A specialized version also exists.)
7	Adjustment tool for piping flare	Used when a conventional flaring tool is used for flare processing	Joint use with R22	Only for R410A
8	Charge port for refrigerant cylinder	For prevention of erroneous use	Only for R407C	Only for R410A
9	Refrigerant cylinder	Refrigerant filling. (Refrigerant color application at the upper part of the cylinder)	Only for R407C (brown)	Only for R410A (pink)
10	Gas leakage detector	Gas leakage check (As the HFC-type refrigerants R407C and R410A do not contain chlorine, a detector for R22 cannot be used.)	Only for HFC-type refrigerant (joint use for R407C and R410A)	Only for HFC-type refrigerant (joint use for R407C and R410A)
11	Pipe cutter, pipe bender	Pipe cutting, pipe bending	Joint use with R22	Joint use with R22
12	Welder, nitrogen cylinder	Pipe welding	Joint use with R22	Joint use with R22

Optional parts/Distribution joint kit for 2 WAY ECO-i 5N series

■ Distribution joint kit

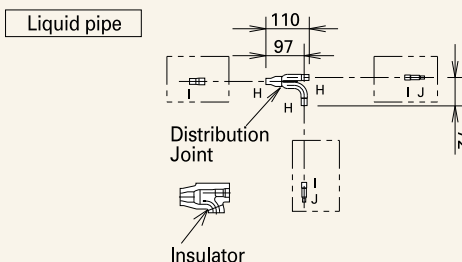
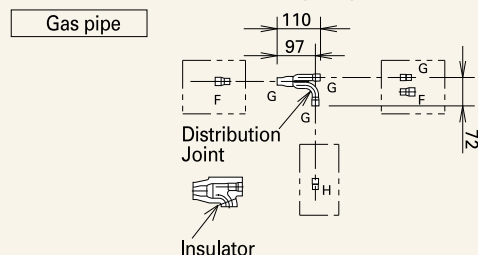
● Connection dimensions of the parts

(mm)

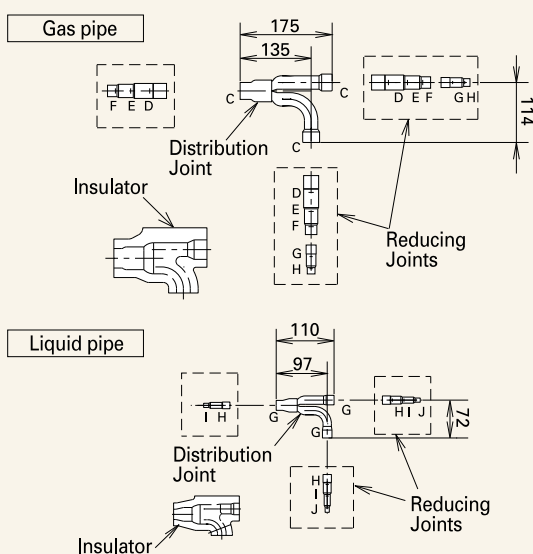
Position	Part A	Part B	Part C	Part D	Part E	Part F	Part G	Part H	Part I	Part J
Dimension	ø38.1	ø31.75	ø28.58	ø25.4	ø22.22	ø19.05	ø15.88	ø12.7	ø9.52	ø6.35

● **APR-P160BG** (for indoor units) (Capacity after distribution joint is 16.0 kW or less.)

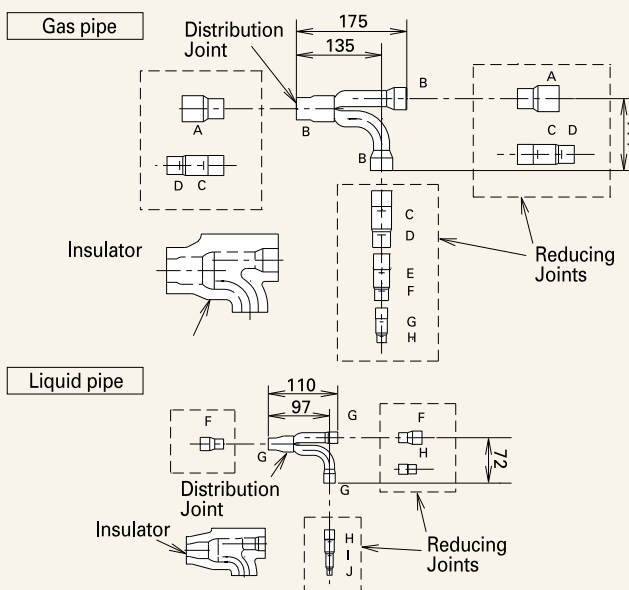
(mm)



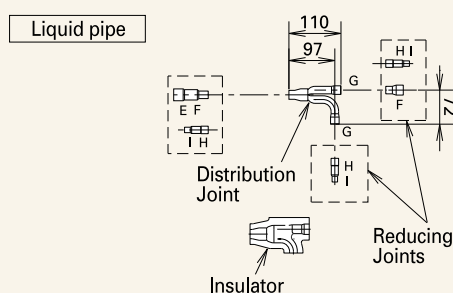
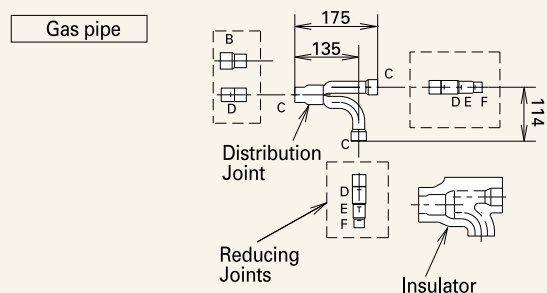
● **APR-P680BG** (for indoor units)
(Capacity after distribution joint is greater than 22.4 kW and no more than 68.0 kW)



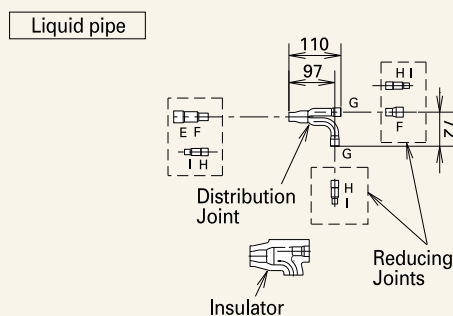
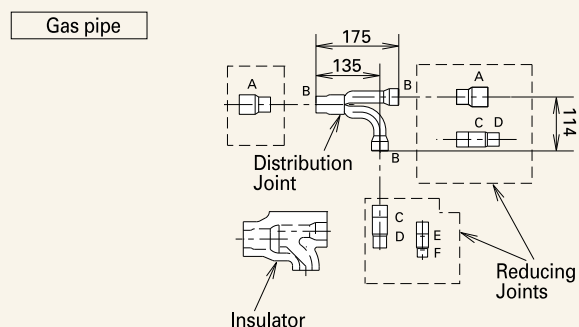
● **APR-P1350BG** (For indoor units)
(Capacity after distribution joint is greater than 68.0 kW and no more than 135.0 kW)



● **APR-CHP680BG** (for outdoor units) (Capacity after distribution joint is 68.0 kW or less)



● **APR-CHP1350BG** (for outdoor units) (Capacity after distribution joint is greater than 68.0 kW and no more than 135.0 kW)



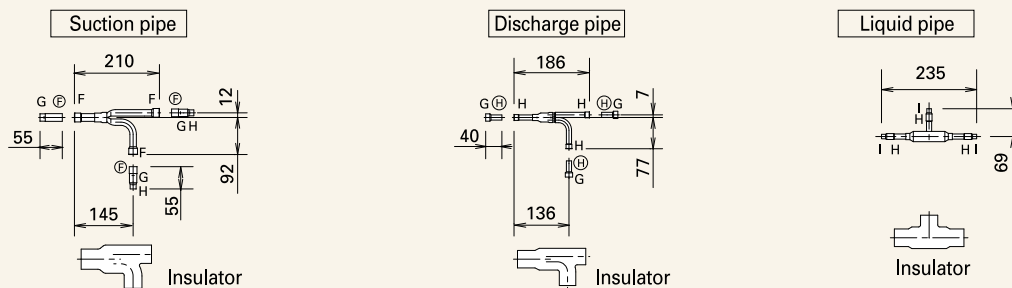
Optional parts/Distribution joint kit for 3 WAY ECO-i MULTI

■ Distribution joint kit

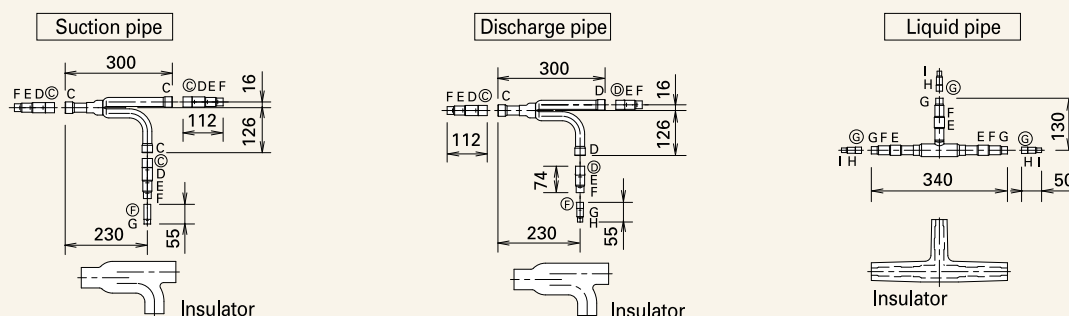
● Connection dimensions of the parts ** Example: In the drawing, F indicates an inner diameter dimension, ⌀ indicates an outer diameter dimension. (mm)

Position	Part A	Part B	Part C	Part D	Part E	Part F	Part G	Part H	Part I	Part J
Dimension	ø38.1	ø31.75	ø28.58	ø25.4	ø22.22	ø19.05	ø15.88	ø12.7	ø9.52	ø6.35

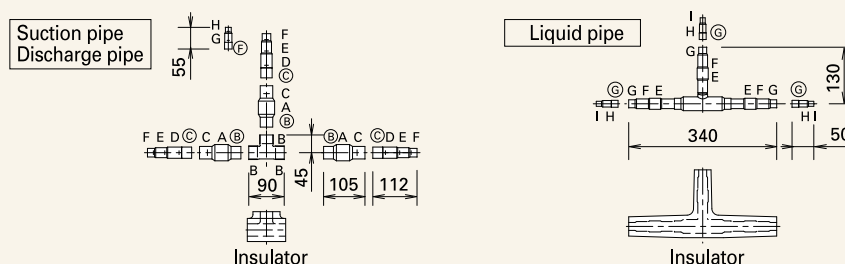
● **APR-RZP224BGB** (for indoor units) (Capacity after distribution joint is 22.4 kW or less.)



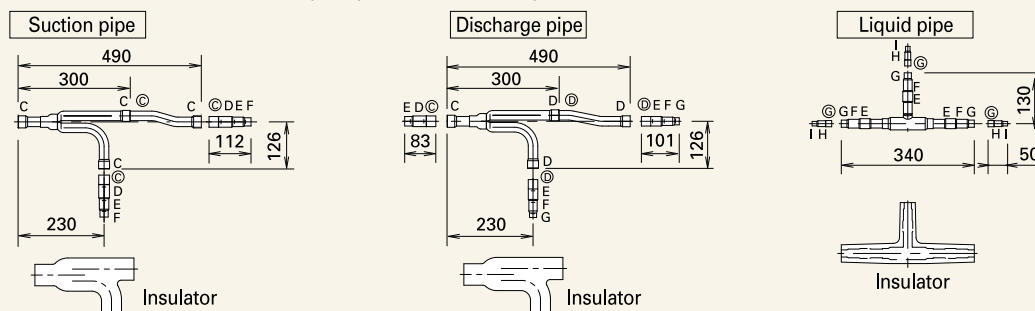
● **APR-RZP680BGB** (for indoor units) (Capacity after distribution joint is greater than 22.4 kW and no more than 68.0 kW))



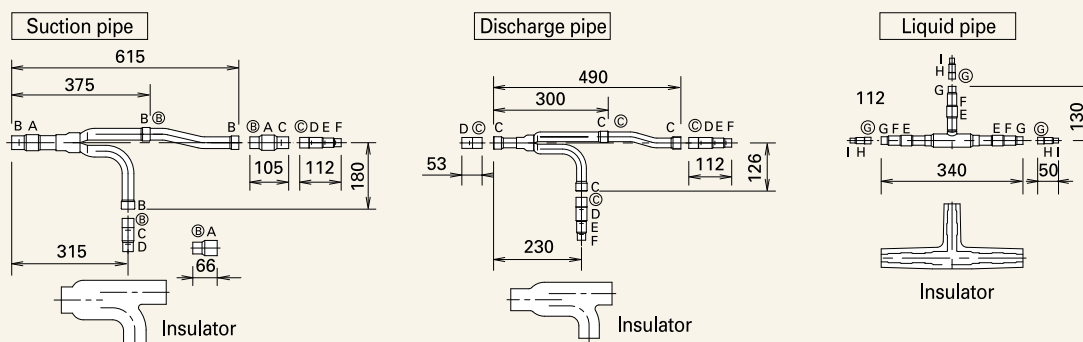
● **APR-RZP1350BGB** (for indoor units) (Capacity after distribution joint is greater than 68.0 kW and no more than 135.0 kW))



● **APR-CHRP680BGB** (for outdoor units) (Capacity after distribution joint is 68.0 kW or less.)



● **APR-CHRP1350BGB** (for outdoor units) (Capacity after distribution joint is greater than 68.0 kW and no more than 135.0 kW))



MINI ECO-i

2 WAY ECO-i 5N series

3 WAY ECO-i

INDOOR UNITS

OPTIONAL PARTS



Indicates conformation
with EC Directives



ISO 9001: 2001
Certificate Number: JQ116B



ISO 14001: 2001
Certificate Number: ECOOJ0303-33

SANYO reserves the right to make any variation in specification to the equipment described or to withdraw or replace products without prior notification or public announcement. All descriptions, illustrations, drawings and specifications in this publication are given in good faith, but are intended to present only general particulars and shall not form any part of the contract. For full installation details, please contact your SANYO distributor.

REF: ECOSG08V1

Rating Conditions

The cooling and heating capacities are based on the following conditions:

Cooling: Indoor temperature 27°C DB / 19°C WB, Outdoor temperature 35°C DB / 24°C WB.

Heating: Indoor temperature 20°C DB, Outdoor Temperature 7°C DB 6°C WB.



Printed using paper produced from 50% recycled material and 50% from sustainable forestry.

www.sanyoaircon.eu

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